

Wednesday April 11, 2018 8:30 AM-11:15 AM

Seminar 1 8:30 AM-11:15 AM

ANALYSIS OF AMBULATORY ASSESSMENT DATA IN BEHAVIORAL MEDICINE

Stephanie T. Lanza, Ph.D., Michael A. Russell, Ph.D.

The Pennsylvania State University, University Park, PA

Ambulatory assessment strategies, including daily diary designs, ecological momentary assessment and experience sampling studies, and wearable biosensors, are gaining increasing prominence in the field of behavioral medicine. The goal of this half-day workshop is to describe two extensions to the linear regression model that are particularly relevant to the analysis of ambulatory assessment data. First, multilevel models will be discussed, with a focus on their application to innovative research questions (e.g., longitudinal burst, where momentary effects are allowed to vary across days, months, or years) in behavioral medicine. Second, time-varying effect modeling, a novel statistical technique for estimating regression coefficients as complex, non-linear functions of time, will be introduced. Estimation of all models described at the workshop models will be demonstrated in SAS. Participants will be provided with a copy of all lecture notes, select computer output, and suggested reading lists for future reference.

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Seminar 2 8:30 AM-11:15 AM

MAKING DIGITAL HEALTH PARTNERSHIPS WORK 'ACROSS THE AISLE': LESSONS FROM INDUSTRY AND ACADEMIC SCIENTISTS

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Partnerships between industry and academic researchers have been touted as the path leading to the production of efficacious digital health products. This type of partnership can facilitate significant uptake and sustained user engagement, provide a sturdy vehicle for dissemination, minimize duplication of efforts and possibly increase impact on health. However, barriers to these partnerships persist. Examples of these barriers include: differences in approaches to product development and improvement, commercial sensitivity to open source and release of proprietary “ingredients” vs academics’ focus on extramural funding, open source products and publishing peer-reviewed articles; and, the tension between almost daily updates in technology vs researchers’ need to “freeze” software or hardware versions to maintain study integrity; and, time and resource constraints.

The purpose of this seminar is to advance participant understanding of the science and practice of digital health from the perspectives of industry and academic experts who are engaged in development of commercial digital health products designed to change health behaviors. Participants will learn how several digital health companies use the evidence base to inform product design and testing, and how researchers can collaborate with companies to develop and test scalable and cost-effective solutions.

This seminar is divided into three parts, all of which include interactive elements: Part I, a question and answer session to introduce the concept of digital partnerships and to understand participants’ prior experiences and their questions and concerns; Part II, three brief case studies, representing common challenges to productive digital health partnerships (e.g., timelines and deliverables, evaluation and outcomes, practical considerations to forming academic-industry partnerships), and Part III, a thought experiment, in which participants will engage in small group discussions focused on ways in which academia and industry can learn from one another and align to advance the field of digital health. The seminar will conclude with a panel discussion with all workshop faculty, providing participants with an opportunity to contribute to the conversation about the future of digital health science and practice including the role of academic-industry partnerships in achieving next steps.

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Seminar 3 8:30 AM-11:15 AM

R FOR BEHAVIORAL SCIENCE

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Behavioral science has been keen to use technology for data capture (e.g., social media, smartphones, and wearable devices) as well as integrate multiple streams of data to measure exposures and outcomes. However, as a whole, the field has been slow to adopt sophisticated methods to manage, process, analyze, and share the data and analyses afforded by said tools and approaches. This is in spite of the fact that open-source and collaborative tools are widely available. R, and its user-friendly workspace application RStudio (and its toolset), can help behavioral scientists become better stewards of their data, and produce more reproducible research.

This workshop will introduce the power of using R for managing, visualizing, and analyzing data with an explicit focus on reproducible research. In this workshop, we will introduce how R, RStudio, and RMarkdown can be leveraged to meet the ongoing and upcoming needs of researchers at all career levels. The workshop is designed for novice to intermediate R users. There is no expectation that attendees are currently using R to manage/analyze their data but we do expect that users come prepared to “live code” and follow along with the instructors during in-class activities.

A short introduction to R, RStudio, and RMarkdown will be given by the instructors. The remainder of the workshop will focus on example-driven instruction that will help attendees learn how to get started with R through using the RStudio application. Example data and analysis code will be made available, and attendees will be introduced to “tidy” data principles for importing, transforming, visualizing, and modeling data. Attendees will be also show how to use the RMarkdown document format and RStudio to create easily shareable and accessible documentation and analytical outputs. Attendees will have access to all workshop materials online for further review after completion of the workshop.

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Seminar 4 8:30 AM-11:15 AM

MB-EAT (MINDFULNESS-BASED EATING AWARENESS THERAPY): TREATING BINGE EATING AND OBESITY

Jean L. Kristeller, Ph.D.

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Mindfulness approaches to treating binge eating and improving weight regulation offer substantial promise. This seminar will introduce the conceptual background, research evidence from multiple NIH-funded clinical trials, and treatment components of a mindfulness meditation-based intervention used effectively with individuals with compulsive eating problems and significant weight problems. It will also frame this approach within a multi-domain model of meditation effects. Our research to date suggests that these individuals can bring compulsive over-eating under control, and that weight loss is associated directly with degree of mindfulness meditation practice. An overview of our manualized NIH-RCT will be presented, along with experiential material related to increasing patients’ experiences of improved self-regulation, and expanded portions developed for addressing weight loss. Portions of a video of participants’ experiences will be shared. Mindfulness meditation appears to act by rapidly promoting interoceptive-awareness of physical hunger and satiety in contrast to non-nutritive triggers for eating, internalization of control, and self-acceptance in individuals with compulsive eating problems associated with obesity. Experiential work will include guided meditations for the workshop participants to experience, including both general and mindful eating practice. This seminar is intended for a range of practitioners, with particular value for those working with health behavior change. However, because control around eating can be an issue for many, the approaches will be more broadly valuable.

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Seminar 5

8:30 AM-11:15 AM

USING BAYESIAN HIERARCHICAL LINEAR MODELING TO ANALYZE WILLFUL HABITS AND THEIR MODERATORS

Yuelin Li, PhD.

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Old habits are hard to break and new habits are hard to form. Some habits are the kind of behaviors that we engage willfully and consciously – like wearing sunscreen or seek shade from the sun – while others appear to have an automatic and unconscious origin – like mindlessly overeating whenever we eat. In this seminar, we will pay special attention to the first kind of habit, the ones that we engage willfully and can be influenced by the circumstances in which they are expressed.

We will learn how to fit Bayesian hierarchical linear models, using real-world data collected in a grant (NIH R21 CA137532) on sun protection behaviors (sunscreen use, shade seeking, hat and protective clothing), assessed from 59 (37 females) first-degree relatives of patients with melanoma, accessed via IVR (Interactive Voice Response) twice daily (1 pm; 5 pm) over 14 summer days (1,304 total assessments, minimal missing data).

We will begin with a simple example with sunscreen use as the single outcome (like logistic regression, which should be familiar to you). We then move to a slightly more complex model (two behaviors, e.g., sunscreen & hat) to examine interactions. And then we move to a full model that includes all 4 sun protection behaviors interacting in a complex fashion under the moderating effects of gender and weather. This step-by-step approach should help attendees feel comfortable with the basic ideas before moving on to more complex examples. We then illustrate the full strengths of a Bayesian model, to address the question on why behavioral scientists should bother with a Bayesian approach when an ordinary HLM seems perfectly adequate? Simply, a Bayesian approach gives you more—important quantities not readily available in results from HLM or SAS PROC GLIMMIX. We will conclude by discussing how these analytic techniques in the specific context of sun protection behaviors can be applied generally to other areas of behavioral research, such as habits with an unconscious origin.

Learning Objectives:

1. Focus on practical analytic skills.
2. Theories explained with visual displays and plots to make them accessible to visual learners.
3. Substantive research questions, e.g.,
 - a. Habit: how much of each person's sunscreen use is attributable to habit?
 - b. Weather: how much influence from promoters, e.g., a sunny and hot day?
 - c. Moderators? Gender differences? Do women and men differ in sunscreen use when it is sunny and hot?

Do people who already use sunscreen frequently use even more on sunny and hot days, if so, by how much?
4. Learners can quickly translate these skills to their own research.

Other Recommendations:

1. Basic familiarity with R helps (e.g., logistic regression in R).
2. Consider bringing a laptop with R already installed, and also 'rstanarm' and 'rstan' packages installed.

[Additional info will be available on <https://idecide.mskcc.org/sbmBayes18>]

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Seminar 6

12:15 PM-3:00 PM

DESIGN SPRINTS & USABILITY TESTING: INNOVATIVE, FAST-PACED METHODS FOR CREATING USER-FRIENDLY DIGITAL HEALTH INTERVENTIONS

William Martinez, MD, MS, Lyndsay A. Nelson, PhD, Anthony Threatt, PhD, MArch

Vanderbilt University Medical Center, Nashville, TN

Health apps and web-based interventions offer novel and scalable approaches to engaging patients and improving health outcomes, however, they have delivered variable results. These mixed results have been attributed to differences in design and usability leading to varying degrees of user engagement. Health apps and web-based interventions with greater user engagement are associated with better outcomes. Involving users in the design process can improve engagement; however, many digital health interventions do not build in this critical step. Human-centered design is an approach to software development that emphasizes optimal user experience by integrating users directly into the design process and helps ensure the creation of a suitable user interface. A significant limitation of prior human-centered design approaches is the time and cost involved in relation to the rapidly evolving pace of technology. However, a recently published design method developed by Google Ventures (Alphabet, Inc.), called a Design Sprint, provides a highly efficient, five-phase, human-centered approach that utilizes design principles to rapidly understand the problem and the audience, explore creative solutions, identify and map the best ideas, prototype, and ultimately test. Usability testing ensures that health apps and web-based interventions meet users' expectations and work as intended such that users can efficiently and effectively engage with the technology. Our interactive workshop will introduce participants to Design Sprint methodology paired with mixed-methods, task-based usability testing. To illustrate the application of concepts to a real world situation, we will present a case study of a diabetes dashboard within a patient web portal that was recently developed by workshop leaders. Our interdisciplinary workshop faculty include: Dr. William Martinez, a physician and NIH-funded researcher focused on creating and testing digital health interventions for patients with diabetes; Dr. Anthony Threatt, a User-Interface Design Engineer with extensive experience designing healthcare-related apps; and Dr. Lyndsay Nelson, a behavioral health psychologist with expertise in usability evaluation methods. Participants will learn how to conduct a 5-day design sprint in order to rapidly create their own viable prototypes that can be subsequently tested. Participants will be taught a scientifically rigorous, mixed-methods approach to evaluating prototype usability to inform revisions and facilitate scholarly publication. For each of the five phases of a Design Sprint, participants will complete small group exercises to apply key concepts and receive feedback from workshop faculty. All participants will leave with the skills and resources needed to conduct a Design Sprint and apply a mixed-methods approach to usability assessment. Valuable hand-out materials outlining the process in detail and providing additional resources will be disseminated.

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Seminar 7

12:15 PM-3:00 PM

USING INTERVENTION MAPPING TO DESIGN A HEALTH EDUCATION PROGRAM TO INCREASE COLORECTAL CANCER SCREENING IN PUERTO RICO

Yolanda A. Serra- Martinez, MED/ Doctoral Student¹, Vivian Colón-López, PhD, MPH², Camille Vélez, MPH², Ileska M. Valencia-Torres, BS³, Adriana Acevedo-Montanez, MS⁴, Maria E. Fernández, Ph.D.⁵

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Introduction: Colorectal cancer (CRC) is a leading cause of cancer-related mortality in Puerto Rico (PR). Although largely preventable through screening and treatment of precancerous polyps, CRC incidence and mortality continues to increase in PR, while screening rates remain low.

Methods: We used Intervention Mapping (IM), a systematic framework using theory and evidence to plan and develop strategies and educational components to increase Colorectal Cancer Screening (CRCS) among Puerto Rican adults 50 years and older.

Results: We determined the CRC incidence and mortality rates in Puerto Rico using information from the PR Cancer registry and conducted a literature review to better understand behavioral and environmental factors influencing CRC in PR. We collected new data to inform the development of a logic model of the problem. We conducted seven focus groups with community to identify the community needs and resources and to identify the specific sub behaviors related to CRCS (performance objectives) and the determinants of CRCS. We then developed matrices of change objectives by crossing performance objectives and determinants. We selected two overarching.

Methods: entertainment education and behavioral journalism and developed practical applications, materials and messages containing several other methods including modeling, persuasion, information, and tailoring. We developed a tailored interactive multimedia intervention, newsletters, a patient action plan, and supplemental print materials for patients. The program also includes patient mediated provider materials to increase provider recommendation. Finally, we conducted two focus group to assess the usability, attractiveness, cultural sensitivity, and motivation generated by the components to perform the screening tests. The research team evaluated the suggestions of the participants and incorporated them into the final version of the educational components.

Conclusion: The use of Intervention Mapping for systematic planning produced a detailed coherent plan for the CRCS program. Guided by IM principles and steps, we used community level information, existing literature, theory, and new data to develop health education components that will likely influence CRCS in PR.

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Seminar 8

12:15 PM-3:00 PM

HABITS OF HIGHLY SUCCESSFUL ACADEMICIANS: MAKING YOUR GRANDMOTHER (AND YOUR DEPARTMENT CHAIR) PROUD

Sarah S. Jaser, PhD, Scott C. Borinstein, MD, PhD, William B. Cutrer, MD, MEd, Joseph Gigante, MD, Jill H. Simmons, MD

Vanderbilt University Medical Center, Nashville, TN

Professional behavior is an important, but often overlooked, skill in graduate and post-graduate training. Despite being critically important for success in academia, little time is spent preparing trainees in these valuable skills. The goals of this workshop are to identify the key qualities of successful academic leaders and to help workshop participants develop techniques to improve how they are perceived by their colleagues. Using a combination of didactic, case-based, and small group learning techniques, important concepts of professionalism, communication, and time management will be addressed. These activities are designed for junior faculty and mid-career faculty to help them reach the next level in their careers. By the end of the workshop, participants will be able to use the CREDO acronym to be more effective academicians, have approaches for navigating academic politics and deciding which tasks to take on, and have an “Elevator Speech” they can use to briefly summarize their academic activities to others.

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Seminar 10

3:15 PM-6:00 PM

MIXWILD: A NEW FREEWARE PROGRAM FOR MULTILEVEL STATISTICAL MODELING OF INTENSIVE LONGITUDINAL DATA

Donald Hedeker, Ph.D.¹, Genevieve F. Dunton, PhD, MPH², Eldin Dzubur, Ph.D.³

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Intensive longitudinal data are increasingly being obtained using modalities such as Ecological Momentary Assessment (EMA) and ambulatory sensor monitoring. In such studies, up to hundreds or thousands of observations may be obtained for each subject, and so one can characterize both the within-subject and between-subject variance, in addition to mean levels. The within-subject variance indicates how consistent/inconsistent a subject is, while the between-subject variance indicates how homogeneous/heterogeneous the population of subjects is. In terms of the between-subject effects, we might also have random intercepts and slopes to further characterize individual effects of subjects on their mean responses. The freeware software program MIXWILD was developed to allow researchers to model both the mean and variance structures in terms of covariates, and to allow the random subject effects to influence subject-level outcomes. Specifically, the 1st stage of the program estimates random subject mean (location, say intercept and slope) and variance effects which can then be used as covariates in a 2nd stage analysis of a subject-level outcome. This approach greatly extends the kinds of research questions one can address with intensive longitudinal data. For example, what factors might be related to a person's consistency/inconsistency of mood, and is a person's consistency of mood related to, say, their ability to maintain a health outcome. This workshop will begin by reviewing the statistical models that underlie the program and then illustrate program use with applications from EMA and ambulatory sensor monitoring studies.

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Seminar 11

12:15 PM-6:00 PM

THE 'NUTS AND BOLTS' OF BEHAVIORAL INTERVENTION DEVELOPMENT: STUDY DESIGNS, METHODS AND FUNDING OPPORTUNITIES

Susan M. Czajkowski, Ph.D.¹, Sylvie Naar, PhD², Christine M. Hunter, PhD³, Frank Perna, Ph.D., Ed.D.⁴, Walter Dempsey, N/A⁵, Elizabeth Towner, PhD⁶, Lynda H. Powell, PhD⁷, Kenneth E. Freedland, PhD⁸, Ty Ridenour, PhD, MPE⁹

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This seminar will provide investigators who are interested in the design and preliminary testing of health-related behavioral interventions an opportunity to (1) learn about a new framework for behavioral treatment development -- the ORBIT model (see <http://psycnet.apa.org/psycinfo/2015-03938-001/>); (2) learn about appropriate study designs and methods for early-phase behavioral intervention research, including which methods are appropriate at each phase of the behavioral intervention development process; (3) apply the ORBIT model and knowledge about relevant methodologies to their own behavioral treatment development projects; and (4) identify early-phase translational research funding opportunities and develop grant applications to support intervention development research. The format will include didactic presentations, question and answer sessions, and small group discussion in which participants will be provided with advice to help them design their own behavioral intervention development project. NIH scientists will provide information on suitable funding opportunity announcements and advice on how to develop applications for NIH support. Extramural behavioral scientists will describe their own experiences in designing behavioral intervention development studies, bringing these "lessons learned" to bear in advising seminar attendees on their individual projects. Didactic presentations will provide detailed information about methodologies and study designs most applicable to the early phases of behavioral intervention development (e.g., qualitative research, single-case designs, dose-finding studies, adaptive and fractional factorial designs, and pilot and feasibility studies), with ample time allotted for questions and discussion. In addition, experiential and small-group activities will deepen participants' knowledge of and skills needed for designing a behavioral intervention development program, allowing time for tailored advice and feedback. Participants will also be asked to submit in advance a 1–2 page synopsis (e.g., abstract, research aims, hypotheses, methods) of a behavioral intervention development project, which can be one they are considering submitting for funding, along with specific questions they may have regarding the process of behavioral intervention development. These will be discussed in small groups led by NIH staff and senior investigators, allowing participants to receive detailed feedback and advice to enhance the quality of their grant applications for designing and optimizing behavioral interventions.

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Seminar 12

12:15 PM-6:00 PM

BREAKTHROUGHS IN POPULATION HEALTH AND MULTIPLE BEHAVIOR CHANGES (MHBCS): EXPANDING OUR REACH AND OUR IMPACTS

James O. Prochaska, Ph.D.¹, Leanne Mauriello, Ph.D.², Colleen A. Redding, PhD³, Andrea L. Paiva, PhD³, Janet L. Johnson, Ph.D.⁴, Janice M. Prochaska, Ph.D., MSW⁵

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Population Health is one of the most promising approaches to enhancing health while reducing health care costs. A key driver is the growing consensus that a small number of health risk behaviors (smoking, alcohol misuse, unhealthy eating and inadequate exercise) account for a large percentage of chronic diseases, disabilities, lost productivity, health care costs, and premature deaths. This Pre-conference combines these two forces to extend the reach and impacts of behavior medicine and population health. Eight 45-minute presentations with discussions begin with an evidence-based framework for more effective and inclusive care by complimenting 18 factors for individual patients with 18 for populations. Examples are reactive reach with individuals seeking care and proactive outreach for populations, and individual care in clinics and hospitals complemented by population care in homes, schools, and worksites. Next, results from two Randomized Population Trials (RPTs) in middle schools and high schools show interventions increasing maintenance of 4 healthy habits and reversal of 4 unhealthy habits. Then, three multi-arm RPTs compare interventions that succeeded and those that failed with populations of primary care patients, employees and parents with up to three of these four big risks. Next, examining data from across five RPTs show synergistic MHBCs that could not be predicted from treatment vs. control comparisons. An example is adolescents who change one energy balance behavior, like diet, are three times more likely to change a second behavior, like exercise, while controls are about 50% less likely to change the second behavior. Then, the first population cessation trial that compares incentives for participating in evidence-based CTIs to incentives for quitting smoking, also examines the transfer effects on MHBCs in untreated behaviors. Next, an impact equation (reach x efficacy) in a benchmarking approach for identifying MHBCs across 85 arms of different population interventions revealed small average impacts and high performing impacts that are 4 to 32 times greater. Then, the synergistic effects of decreasing three of the big four risk behaviors simultaneously increases multiple domains of well-being in a large vulnerable population. Next, an evidence-based model links the big four behaviors plus stress at individual and social levels to the biological immune system functioning. Finally, we focus on future steps with SBM and beyond.

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Wednesday April 11, 2018 6:30 PM-7:30 PM

A001

6:30 PM-7:30 PM

A FACEBOOK-DELIVERED INTERVENTION FOR SUN PROTECTION AND SKIN SURVEILLANCE AMONG MELANOMA PATIENTS AND THEIR FAMILY MEMBERS

Elliot Coups, PhD¹, Kevin Criswell, PhD¹, Sara Frederick, MS¹, Evangelynn Murphy, MS¹, Sherry Pagoto, PhD², James Goydos, MD¹, Sharon Manne, PhD¹

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Background: First-degree relatives (FDRs) of young onset melanoma patients (i.e., diagnosed < 40 years of age) are at elevated risk for melanoma. However, FDRs and patients do not sufficiently engage in sun protection and skin surveillance (i.e., skin self-examination and examination from a physician) behaviors. In this project, we tested the potential of a novel social media-based approach (secret Facebook groups) to address these behaviors in this population.

Methods: 48 young onset melanoma patients (*M* age = 34.5) and 40 of their family members (spouses/partners and first-degree relatives) (*M* age = 39.5) were recruited from Rutgers Cancer Institute and via the New Jersey State Cancer Registry. Using an iterative process, we conducted a series of 5 separate, Facebook groups (*n*s from 8–35 participants) that lasted from 2 (group 1) to 4 weeks (groups 2–5). We posted two messages per day that addressed skin cancer risks, protective behaviors, skin self-examinations, and physician skin examinations. For all groups, participants completed a baseline online survey regarding relevant psychosocial and behavioral factors (e.g., family support for behavior change, behavioral benefits/barriers, and behavioral intentions) as well as a semi-structured telephone interview immediately after the group. Participants in groups 2–5 also completed an online follow-up survey (same topics as the baseline survey as well as feedback regarding the Facebook group) one month later.

Results and Discussion: Interview feedback from group 1 participants suggested organizing the messages by weekly themes, expanding the group length, increasing interactivity, using personal narratives, and including “ask the doctor” posts. These changes were made for group 2, followed by further changes (triggered by participant feedback) for groups 3–5 (e.g., increasing the group size and the number of posts related to young adults). Participant engagement (assessed by the number of likes and comments per participant) was higher in groups 4 and 5 (likely in part due to their larger sizes, which triggered greater interaction among participants) compared to the earlier groups. Overall, evaluations of groups 4 and 5 were positive (all measured by averaging items using a 1–7 low to high scale): evaluation of the content, *M* = 5.98; the group helped prepare me, *M* = 5.68; social connectedness, *M* = 5.57; Facebook experience, *M* = 5.87. There was also evidence of statistically significantly increased pre-post behavioral intentions (sun protection, skin self-examination, physician skin examination) in groups 4 and 5 (*d*s = 0.41–0.54). Overall, there was evidence of feasibility of this innovative approach as well as indications of potential efficacy. The discussion will include a focus on lessons learned and next steps.

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A002

6:30 PM-7:30 PM

BARRIERS TO TOBACCO TREATMENT TRIAL ACCRUAL AND COMPLETION AMONG INDIVIDUALS USING TOBACCO AT CANCER DIAGNOSIS

Jamie L. Studts, PhD¹, Lauren Shelton², Christina Studts, PhD³, Michelle Punzal, BS⁴, Kristine Damron⁵, Brent J. Shelton, PhD, MS⁵, Joe Valentino, MD¹

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Introduction: While there is ample evidence supporting the efficacy of pharmacologic and behavioral interventions in the treatment of nicotine dependence and tobacco use, a dearth of data exists to guide treatment recommendations and interventions in the oncology setting. Given the benefits of cessation following diagnosis, practical guidance is needed regarding tobacco treatment for the one-third of cancer survivors who continue to use tobacco. In rural, tobacco-producing regions of the country, the proportion of cancer survivors using tobacco is likely even higher. To address this clinical research gap, the investigative team developed and launched a randomized factorial trial, using the Multiphase Optimization Strategy (MOST) to screen candidate intervention components to include in a subsequent confirmatory phase trial. The candidate intervention components included pharmacotherapies, nicotine replacement strategies, and behavioral counseling.

Method: The aim of this report is to examine barriers to study accrual and participant trial completion among the consented participants to date. Patients diagnosed with a tobacco-related malignancy who were current tobacco users were invited to participate at 9 cancer care facilities throughout Kentucky. Data were drawn from accrual records, study surveys (e.g., demographics, tobacco use history), and disease and treatment records.

Results: Through 40 months of accrual, only 72 of the targeted 180 participants have been enrolled. Study records indicate that strong patient preferences for tobacco treatment approaches have hindered accrual, secondary to strong opinions regarding the pharmacotherapy component. Additionally, accrual rates have varied widely across centers, suggesting that system factors play a strong role in accrual. Sites with engaged clinician-investigators committed to integrating tobacco treatment guidelines have achieved substantially higher accrual. Of the 72 enrolled participants, 40 (56%) have completed the trial by providing data at the 6-month follow-up and one participant is currently on study. Analyses suggest that lesser nicotine dependence and greater confidence in quitting were the only demographic, disease/treatment, or tobacco use history variables associated with trial completion.

Conclusion: Despite the large proportion of eligible patients, enrolling early cancer survivors and supporting their continued participation in the trial has proven challenging, particularly in a predominantly rural and tobacco-producing region. These data suggest that investigators must account for strong patient treatment preferences, cancer care system parameters, and the need for extensive engagement efforts to support accrual and trial completion when attempting to conduct clinically-relevant research informing integration of tobacco treatment approaches in cancer care settings.

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A003

6:30 PM-7:30 PM

FACETS OF SPIRITUALITY AS PREDICTORS OF SLEEP QUALITY AND PSYCHOLOGICAL ADJUSTMENT ACROSS 12 WEEKS IN LUNG CANCER PATIENTS

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Background: Spirituality is associated with better psychological outcomes among cancer patients, and specific facets of spirituality (i.e., meaning/peace, faith) are differentially influential for adjustment during cancer survivorship. However, these relationships are demonstrated in correlational more than longitudinal research and typically focus on psychological outcomes. This study investigates meaning/peace, faith, and their interaction as predictors of a behavioral health outcome (i.e., sleep quality) as well as psychological adjustment across 12 weeks in lung cancer patients. We also explore whether meaning-making coping strategies (i.e., coping through religion, acceptance, positive reinterpretation) and protective psychosocial factors (i.e., self-compassion, social support) predict changes in spirituality.

Method: Participants (n=82; 55% male, mean [SD] age=64.5[12.8] years) were men and women receiving medical treatment for lung cancer. Participants completed validated measures of spirituality, sleep quality, depressive symptoms, and cancer-related anxiety at study entry and at 6- and 12-week follow-up assessments. Participants also completed validated measures of self-compassion, coping strategies, and social support at study entry. First, multivariate regression were conducted in a structural modelling equation framework to assess meaning/peace, faith, and their interaction as predictors of sleep quality, depressive symptoms, and cancer-related anxiety at study entry as well as at 6- and 12-week follow-up. Next, multivariate regressions evaluated meaning-making coping strategies and protective psychosocial factors as predictors of spirituality at study entry as well as at follow-up. Missing data was addressed by using full-information maximum likelihood.

Results: Higher meaning/peace, but not faith, was correlated with better sleep quality, fewer depressive symptoms, and less anxiety at study entry (psConclusions: Consistent with research, meaning/peace was the more influential facet of spirituality in predicting favorable sleep-related and psychological adjustment. Findings also indicate self-compassion and coping through positive reinterpretation as malleable psychosocial factors that can potentially be harnessed through psychosocial interventions to bolster meaning/peace and, in turn, promote positive adjustment to cancer.

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A004

6:30 PM-7:30 PM

ONCOLOGY CARE PROVIDER ADHERENCE TO TOBACCO USE ASSESSMENT AND TREATMENT CLINICAL PRACTICE GUIDELINES

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Introduction: Tobacco use after a cancer diagnosis negatively impacts health outcomes, while tobacco cessation improves symptoms, side effects, and overall prognosis. The Public Health Service and major oncology organizations have well-established guidelines for tobacco use treatment among cancer patients, including provider assessments of tobacco use at each visit. Oncology care providers (OCPs) play important roles in this process (noted as the 5As: Asking about tobacco use, Advising users to quit, Assessing willingness to quit, Assisting in quit attempts, and Arranging follow-up contact). However, many oncology care providers may not be using the “teachable moments” related to cancer diagnosis, treatment, and survivorship to provide cessation advice and assistance.

Methods: In this scoping literature review of articles from 2006–2017, we discuss: 1) frequency and quality of OCPs’ tobacco use assessments with cancer patients and survivors; 2) barriers to providing quality tobacco treatment for cancer patients; and 3) the efficacy and future of provider-level interventions to facilitate adherence to smoking cessation guidelines.

Results: Despite the importance of cessation for cancer patients and the existence of clear professional guidelines, OCPs are not adequately addressing smoking cessation with their patients. The reviewed studies indicate that while >75% assess tobacco use during an intake visit and >60% typically advise patients to quit, a substantially lower percentage recommend or arrange smoking cessation treatment or follow-up after a quit attempt. Less than 30% of OCPs report adequate training in cessation interventions.

Conclusions: Intervention trials focused on provider- and system-level change are needed to promote adherence to tobacco treatment guidelines. Attention must be given to the barriers faced by OCPs, such as limited training, when tailoring interventions for the oncologic context.

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A005

6:30 PM-7:30 PM

PHYSICAL HEALTH-RELATED QUALITY OF LIFE AND SPIRITUALITY IN BREAST CANCER SURVIVORS: A CROSS-LAGGED MODEL

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Background/Purpose: A recent meta-analysis reported a significant positive relationship between religion/spirituality and physical well-being in cancer survivors. However, the included studies were primarily cross-sectional which prevents making inferences regarding the directionality of the relationship. This longitudinal study sought to examine the potential reciprocal relationship between physical-health related quality of life (HRQoL) and spirituality among breast cancer survivors (BCS).

Methods: BCS (N=634; M age = 55.5; 90% Caucasian) completed baseline assessments within 8 months of breast cancer diagnosis and 12 and 18 months later. Spirituality was assessed by the Functional Assessment of Chronic Illness Therapy- Spiritual Well-Being Scale (FACIT-Sp) which consists of 3 subscales: meaning, peace, and faith. Physical HRQoL was measured with the SF-36 Physical Component Summary (PCS). A cross-lagged structural equation model (SEM) was used to analyze the three-wave data to examine the reciprocal relationship between the observed variable, PCS, and the 3 subscales of the FACIT-Sp (treated as latent variables).

Results: Bivariate correlations confirmed significant cross-sectional relationships between meaning and PCS and peace and PCS, but not faith and PCS, at all three waves. The cross-lagged SEM yielded an adequate fit to the data: RMSEA = .036, CFI = 0.967, TLI = 0.959. After controlling for relevant socio-demographic (age, race, comorbidities) and cancer-related (stage, chemotherapy, radiation, time since diagnosis) variables, results revealed that only higher PCS at 12 months predicted greater meaning at 18 months (standardized parameter estimate = 0.097; $p = 0.013$). Baseline PCS did not predict meaning at 12 months and the reciprocal relationship of meaning predicting PCS was not significant. Neither peace nor faith was reciprocally related to PCS.

Conclusions: Results provide evidence of a unidirectional relationship between physical HRQoL and subsequent meaning among BCS during the period of early to later survivorship. Results also underscore the importance of examining spirituality as a multi-dimensional construct, as meaning, but not faith or peace, was longitudinally related to physical HRQoL. During the post-treatment phase, those who are doing better physically may be able to experience greater meaning in their life subsequently, as they may be able to engage more in activities that give purpose to life.

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A006

6:30 PM-7:30 PM

RELIGIOUS AND SPIRITUAL VARIABLES ASSOCIATED WITH NEUROIMMUNE BIOMARKER ACTIVITY IN BREAST CANCER SURVIVORS

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Background: Mindfulness-based interventions, rooted in Eastern religious/spiritual (R/S) traditions, appear to buffer adverse neuroendocrine-immune changes associated with chronic stress in breast cancer survivors. Evidence linking the R/S basis of these interventions with neuroendocrine function, i.e., hypothalamic-pituitary-adrenal axis (HPAA) and sympathetic-adrenal-medullary system (SAM), is limited. Previously we reported positive spiritual beliefs, i.e., beliefs in a loving God/ higher power, were associated with the magnitude of cortisol awakening response. This paper disseminates our new findings regarding relationships between R/S variables; health outcomes; biomarkers of SAM and HPAA activity, i.e., sAA and cortisol, respectively; as well as interleukin-6 (IL-6) as a biomarker of immune function.

Methods: This was an observational, cross-sectional pilot study. Female breast cancer survivors (N=41) provided salivary specimens at awaken (eyes open), awaken +30 minutes, and bedtime for 2 days. Participants completed the Brief Multidimensional Measure of Religiosity/Spirituality, SF-36v2 Health Outcomes, and demographic measures. Data analyses included descriptive statistics and Spearman's rho correlations.

Results: A majority of participants (88%) reported Christian faith traditions. Forgiveness was associated with lower morning sAA concentrations at awaken ($r_s = -.47$, $p < .01$; post-awaken ($r_s = -.39$, $p < .05$); mean daily sAA ($r_s = -.40$, $p = .01$); and sAA awakening response ($r_s = -.25$, $p = .13$). Positive spiritual beliefs were associated with steeper cortisol slope ($r_s = .37$, $p < .05$). Lower evening IL-6 was associated with positive congregational support ($r_s = .42$, $p < .05$) and social function ($r_s = .42$, $p < .05$).

Discussion: Based on this sample of breast cancer survivors, our data suggest forgiveness may be associated with daily SAM response while positive spiritual beliefs may be associated with daily HPAA reactivity. Social support may contribute to lower evening IL-6 suggesting an immunoprotective role against inflammation in breast cancer survivors. Our findings offer direction for future research regarding the utility of R/S variables in psychoneuroimmunological-based research.

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A007

6:30 PM-7:30 PM

RELINQUISHING CONTROL OF OUTCOMES TO GOD: AN EXAMINATION OF PHYSICAL AND EMOTIONAL OUTCOMES IN THE CONTEXT OF CANCER

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Introduction: In the context of a cancer diagnosis, relinquishing control by letting go or placing it in “God’s hands”, is an approach to dealing with the uncertainty of disease outcomes. The relative tendency to place outcomes in “God’s hands” have been associated with higher scores on measures of religious coping and quality of life, but physical health variables have not been closely examined.

Method: 533 cancer patients and survivors completed the Religious Problem Solving Scale (RPPS), and measures of symptoms, comorbidities, functional capacity, coping, and emotional well-being. The RPPS Deferring (D-placing outcomes in God’s hands) and Collaborative (C-being partners with God in determining outcomes) scales were very highly correlated and negatively correlated with Self-Directing (SD-taking personal responsibility for outcomes). A continuous variable (C+D-SD) was constructed. As scores increase there was a greater tendency to defer outcomes to God. Regression analyses were conducted with C+D-SD as the DV and the composite symptoms/comorbidities, the composite functional capacity, composite coping and the composite emotional well-being variables as IVs.

Results: Composite symptom/comorbidities and composite functional capacity were not significant predictors of C+D-SD ($p > .05$). However, the coping ($B = .248, t = 6.02, p = .001$) and emotional well-being ($B = .191, t = 4.57, p = .001$) composites were highly related to placing outcomes in “God’s hands”.

Conclusions and Implications: There was no advantage to letting go of outcomes in terms of having less concurrent symptoms or more functional capacity. The advantages appear to be in the domains of coping and emotional well-being. Perhaps placing outcomes in “God’s hands” reflects a belief in the continuing effort on God’s part, and one that provides some degree of relief from the stress associated with the uncertainty of outcomes. This approach may, in turn, provide a greater capacity for coping and could plausibly be associated with improved well-being over time. Longitudinal analysis would be important in determining the relationship between letting go and longer-term outcomes.

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A008

6:30 PM-7:30 PM

UNDERSTANDING REACH AND UPTAKE OF TOBACCO CESSATION TREATMENT DELIVERY IN A COMPREHENSIVE CANCER CENTER

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Introduction: Clinical guidelines for the treatment of tobacco dependence in cancer care exist (NCCN) and all leading oncology professional organizations have strongly endorsed tobacco use screening and treatment. Nonetheless, recent national surveys reveal that implementation of evidence-based tobacco treatment in cancer centers is inconsistent and suboptimal. In order to improve implementation quality, there is a need to better understand patient reach and acceptability.

Method: As standard of care at our comprehensive cancer center, all new patients are assessed for smoking status and current smokers are referred for evidence-based cessation counseling and pharmacotherapy provided by designated tobacco treatment specialists. Using annual (2016) clinical program data from a well-established tobacco treatment program (TTP) serving patients treated at a comprehensive cancer center, we sought to identify the % of current smokers (past 30 days) referred (reach) to the TTP, the % current smokers enrolled (uptake), as well as the stated reasons and characteristics of TTP refusers.

Results: In 2016, the MSK TTP received 3681 unique patient referrals reflecting a 61% referral rate (reach) of all current smokers. Recent former smokers and nondaily light smokers were less likely to be referred. Of those patients referred, we found that 37% ($n = 1362$) patients were unreachable with three call attempts and 30% declined ($n = 1104$) tobacco treatment services. In terms of most common reasons given by patients for TTP referral refusal, 19% prefer to quit on their own and 18% were not yet ready to quit.

Conclusion: Identification, referral and engagement of all current smokers are essential goals for improving the quality of tobacco cessation treatment delivery in routine cancer care. This presentation will discuss the ongoing application of an implementation framework to identify patient, provider and systems-level barriers to improve reach and uptake of tobacco cessation treatment so as to reduce tobacco-related morbidity and mortality in cancer care.

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A009

6:30 PM-7:30 PM

UNDERSTANDING THE NEEDS OF BREAST CANCER SURVIVORS WHO DECLINE A TRIAL OF A COUPLE-BASED INTIMACY ENHANCEMENT INTERVENTION

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PURPOSE: Despite researchers’ best efforts, recruiting couples to behavioral intervention studies in cancer is challenging. It is therefore important to understand why study candidates who are eligible decline such trials, how those who decline are different from those who accept, and what alternatives are preferable. In recruiting for a 4-session couple-based telephone sexual quality of life (SQOL) intervention for breast cancer survivors, the objectives were to (1) examine reasons for non-participation and intervention preferences of study-eligible women who declined (refusers) and (2) explore whether refusers differed from participants on key characteristics.

METHOD: Partnered early stage breast cancer survivors (6 months-5 years post-treatment) reporting sexual concerns > 3 [possible range 0–10] were recruited to the intervention study (91 women eligible; 31 couples consented; 29 couples randomized). Of the 60 eligible women who did not enroll, 35 were approached to complete a standardized 5-minute telephone survey assessing reasons for declining and preferences for SQOL support, 31 of whom agreed (89% acceptance rate). Demographic, clinical, and sexual concerns information were collected during telephone screens.

RESULTS: Among refusers [$N = 31$; mean age = 56 (SD = 9); 87% white; 81% on hormone therapy; mean time since treatment = 30 months (SD = 16); mean sexual concerns = 6.5 (SD = 2.1)], the most common reasons for non-participation were time commitment (65%) and partner non-interest (33%). The two most preferred SQOL resources were informational websites (45%) and meeting with a professional (26%), followed by written materials (23%) and support groups (7%). Fifty-five percent endorsed wanting their partners involved in a program to address sexual concerns whereas 10% did not want partners involved at all. Refusers and participants were compared on age, race, hormone therapy use, time since treatment, and sexual concerns using independent t-tests or Chi-Square tests; no group differences were found ($p > .50$).

CONCLUSION: Breast cancer survivors who declined a SQOL intervention were largely similar to those who participated on demographic and clinical characteristics, and level of sexual concerns. Most refusers cited the time commitment – rather than partner involvement – as a reason for non-participation, suggesting that developing briefer couple-based interventions and using shortened assessment surveys might be useful strategies to increase enrollment.

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A010

6:30 PM-7:30 PM

EXAMINING THE EFFECTS OF INTERACTIVITY ON SKIN CANCER WEBSITES: A FEASIBILITY STUDY ON WEB-BASED SKIN CANCER INTERVENTION

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Background: Characteristics of the interactive digital media being used for health interventions, such as interactivity, may impact individuals' perceptions of the health information, attitudes toward the health messages, behavioral intentions, and other health-related outcomes. The present study aims to examine (1) how different types of interactivity influence attitudes, behavioral intentions, and knowledge related to skin cancer, the most common cancer in the U.S., and (2) the feasibility of using these interactivity cues in online skin cancer interventions.

Method: Participants (N=287) were recruited from M-Turk to participate in a 2 (modality interactivity: high vs. low) x 2 (message interactivity: high vs. low) online experiment which examined effects of modality interactivity and message interactivity on knowledge, attitudes, and behavioral intentions toward skin cancer. General linear model (GLM) analyses were used to test the effects of the two independent variables on dependent variables. To test the mediating effects, a set of regression-based process macro models by Hayes were used.

Results: Participants in the high modality interactivity condition ($M=6.03$, $SE=.08$) scored high on attitudes toward the health information about skin cancer than participants in the low modality interactivity condition ($M=5.79$, $SE=.08$), $F(6, 281)=6.416$, $p<.05$. Participants who explored the high modality websites ($M=5.70$, $SE=.12$) scored higher on intention to use sunscreen in the future than participants who explored the low modality websites ($M=5.18$, $SE=.12$), $F(5, 282)=6.12$, $p<.001$. Participants in the high message interactivity conditions ($M=4.42$, $SE=.10$) scored higher on perceived knowledge than participants in the low message interactivity conditions ($M=4.99$, $SE=.10$), $F(6, 281)=12.56$, $p<.001$. There was an interaction effect of modality interactivity and message interactivity on the memory recall, $F(6, 281)=8.95$, $p<.001$. Participants who were in the high modality interactivity and high message interactivity condition had the highest score on the memory recall. Attitudes toward skin cancer mediated the effects of modality interactivity on intentions to use sunscreen.

Conclusions: The results suggest that high modality interactivity could improve attitudes and intentions of skin cancer-related outcomes while high message interactivity could increase the knowledge of skin cancer. The current study provides insights of designing a web-based skin cancer intervention and demonstrate the feasibility of using technological cues in health interventions.

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A011

6:30 PM-7:30 PM

NEED AND ACCEPTABILITY OF DIGITAL HEALTH INTERVENTIONS AMONG OLDER GASTROINTESTINAL CANCER SURVIVORS

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Background: This study aimed to characterize physical activity (PA) and sedentary behavior (SB) profiles in older gastrointestinal (GI) cancer survivors, assess their interest in interventions to modify these behaviors, and evaluate the acceptability of digital tools for delivering interventions to modify these behaviors.

Methods: Survivors (M=65 years) from an outpatient survivorship clinic at the Penn State Cancer Institute completed a questionnaire during a clinic appointment.

Results: Most survivors failed to attain the recommended level of PA (79%) or exceeded an average of 8 hours of daily SB (42%). Access to internet and text messaging capabilities were high (70%), yet few survivors had access to smartphones or tablets (<40%) or reported interest in using digital tools to improve PA or reduce SB (<30%). Digital PA and SB interventions were more acceptable to younger survivors, survivors reporting more SB and survivors engaging in more PA. The monetary value ascribed to digital health interventions did not differ as a function of mode of delivery (i.e. text messages, web, email, tablet computer apps or smartphone apps).

Conclusions: Older GI cancer survivors can benefit from interventions to increase PA and decrease SB. Interest in such interventions was moderate and the acceptability of digital health tools for these interventions was limited. At the present time, behavioral interventions for older GI cancer survivors should not be delivered exclusively through digital tools, and strategies to improve adoption of various technologies should be implemented when using these tools to modify PA and SB.

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A012

6:30 PM-7:30 PM

OUTCOMES OF A TECHNOLOGY-BASED INTERVENTION TO SUPPORT PHYSICAL ACTIVITY AMONG CANCER SURVIVORS: A PILOT RANDOMIZED TRIAL

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Background: Exercise has a positive impact on functioning and quality of life for cancer survivors, but few achieve the recommended levels for health benefits. Facility-based oncology rehabilitation exercise programs are beneficial for improved strength and fitness, however, sustained engagement in exercise is a challenge once a program ends. The aim of this pilot study was to evaluate a technology-based intervention to support maintenance of exercise following oncology rehabilitation.

Methods: Cancer survivors were recruited after completing exercise-based oncology rehabilitation (n=54; 81% female, mean age 61.9). Participants were randomized to an eight week intervention consisting of health coaching (1 in-person, 3 follow-up meetings by phone), text messages to a personal cell phone, and use of a Fitbit for self-monitoring of physical activity or to a group that received the Fitbit-only. The primary outcome of moderate-to-vigorous physical activity (MVPA) was assessed via Actigraph accelerometer, along with step counts, at baseline and eight weeks. Self-efficacy, social support, self-regulation, fatigue, and sleep disturbance were assessed by questionnaire at baseline and post intervention.

Results: Participants in the full intervention (n=25) maintained weekly minutes of MVPA from pre-intervention ($310.8.5 \pm 122.8$) to post-intervention (328.1 ± 204.5 ; $p=0.65$), whereas those in the Fitbit-only group (n=29) had a significant decrease in MVPA (306.1 ± 187.3 pre vs 247.8 ± 177.5 post; $p=0.05$). There was no significant change in mean daily step counts, self-efficacy, or self-regulation for either group. Full Intervention participants maintained social support for exercise and increased relapse prevention strategies, whereas the Fitbit-only group had a significant decrease in perceived social support and no change in relapse prevention skills. Sleep disturbance and fatigue decreased significantly for both full intervention and Fitbit-only participants.

Conclusions: The findings demonstrate that remote interventions using technology can promote engagement in MVPA outside of a structured program. Those in the Fitbit-only group experienced benefits in the form of reduced fatigue and sleep disturbance but did not maintain MVPA levels after eight weeks. Additional research is needed to assess if technology-based intensive interventions can sustain maintenance of MVPA in the long-term.

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A013

6:30 PM-7:30 PM

PHYSICAL ACTIVITY DURING BREAST CANCER TREATMENT PRESERVES STRENGTH AND PHYSICAL FUNCTION

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The American Cancer Society estimates that women diagnosed with localized breast cancer have 5-year survival rates between 72–100%, contributing to the more than 3.1 million breast cancer survivors in the United States. Due to high survival rates after diagnosis, it is important to examine factors that impact physical function over the course of cancer treatment.

Purpose: To prospectively analyze the extent to which physical activity predicted changes in strength, shoulder mobility, and physical function in a group of 400 women with recently diagnosed, staged breast cancer.

Methods: Three visits were included in this study: pre-surgery, one year, and two-years post-surgical intervention. At each session, participants were instructed to perform grip strength, bicep curl, and tests of shoulder flexion and abduction. Physical function difficulty and physical activity (PA) levels were also assessed at each time point via questionnaire.

Results: The majority of women in this study were diagnosed with early stage breast cancer, 90.4% stages 0, I, and II, with a mean age of 57 years ($SD = 11.87$; range 23–87 years) and a mean BMI of 29.24 kg/m^2 ($SD = 6.16 \text{ kg/m}^2$). Average scores on the baseline Godin leisure-time exercise questionnaire indicated low physical activity levels (≤ 23). Linear regression analyses, controlling for baseline outcomes and key demographic factors (i.e., age, BMI, treatment) indicated that baseline PA predicted year one bicep strength ($\beta = .266$, $p < .000$). Conclusions: Since pre-treatment as well as PA changes during treatment affect strength and physical function and physical activity levels before and during treatment are below national recommendations, future research should target PA interventions concurrent with treatment to preserve strength and physical function during survivorship.

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A014

6:30 PM-7:30 PM

PROJECT PAT (POSITIVE ABOUT TRIPLE NEGATIVE): ASSESSMENT OF THE PSYCHOSOCIAL AND BEHAVIORAL OUTCOMES OF TNBC SURVIVORS

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Background: Triple negative breast cancers (TNBC) are difficult to treat due to their negative expression of three specific hormone receptors. This diagnosis may have deleterious effects on a survivor's psychosocial functioning. Scarcity in the literature comparing TNBC vs. hormone sensitive survivors, research for new, tailored bio-behavioral interventions are warranted.

Methods: Project PAT is a correlational study assessing the relationship between individuals with TNBC and their bio-behavioral and socio-medical demographic characteristics, while also comparing them to hormone sensitive survivors from a study performed by Andersen *et al.* (2004). Eligible participants were female, ≥ 18 y.o., ≤ 3 years of TNBC diagnosis, and English speaking. Participants were recruited through the UTSW Medical School cancer tumor registry and medicially cleared to participate. Assessments consisted of demographic, psychosocial, behavioral, medical history, and health behaviors questionnaires.

Results: Participants' ($n=46$) ages ranged from 30–79 ($M = 53.51$; $SD = 12.48$). The sample was comprised of: 32.6% ($n = 15$) African American, 2.2% ($n = 1$) Asian, 60.9% ($n = 28$) Caucasian, and 4.3% ($n = 2$) Other. Within the sample, 8.7% ($n = 4$) identified as Latina/Hispanic. Within this sample, individuals diagnosed with TNBC reported significantly positively correlated scores on the CES-D and POMS-TMD (Total Mood Disturbance) $r(45) = .689$, $p \leq .000$ and the CES-D and SF-36-MCS (Mental Component Summary) $r(45) = -.629$, $p \leq .000$. Hormone sensitive survivors ($n = 210$) at 4 months post-diagnosis reported lower POMS scores ($M = 36.32$; $SD = 34.26$) compared to our sample ($M = 51.34$; $SD = 36.10$) - suggesting TNBC survivors have higher levels of overall psychological distress. Furthermore, age was positively correlated to self-breast examinations, $r(45) = .304$, $p < .000$, $r(27) = .689$, $p \leq .000$, respectively.

Conclusion: When assessing mood states, TNBC survivors reported higher levels of psychological distress than their hormone sensitive counterparts. Furthermore, when assessing relationship status, married compared to non-married TNBC survivors engaged in more BC screening behaviors.

Implications: These findings can lead to tailored bio-behavioral interventions for TNBC survivors, and potentially non-TNBC survivors.

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A015

6:30 PM-7:30 PM

SOCIAL NETWORKS OF NEURO-ONCOLOGY CAREGIVERS

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Background: Family caregivers (FCGs) are increasingly recognized as a vital part of the comprehensive treatment of cancer. However, many FCGs, especially those caring for patients with primary malignant brain tumor (PMBT) report feeling overwhelmed by providing care. Social support can be protective for caregiving, but there is little research on social network composition in FCGs.

This poster will describe the type of people and resources FCGs of PMBT report having in their social network.

Methods: As part of a larger study, FCGs of PMBT were recruited from a neuro-oncology clinic at an NCI-designated comprehensive cancer center. FCGs were asked to list social network resources (e.g. people or organizations) that they either have approached or could approach for help in the following six areas: 1) hands on support, 2) informational support, 3) communication support, 4) financial support, 5) emotional support, and 6) self-care support.

Results: 29 FCGs provided data. Participants were mostly non-Hispanic White (93%), female (79%), spouses of patients (54%) with a mean age of 57 years (SD=12). On average, FCGs listed 10.8 unique people in their social network across all categories (range: 1–30). On average, FCGs listed fewer than 5 individuals in each category: hands on (M=4.9, 0–25), emotional (M=4.4, 0–25), self-care (M=2.6, 0–16), informational and communication (M=2, 0–6), and financial (M=1.5, 0–19). Complete lack of social support was reported among 47% (financial), 28% (self-care), and 7% (informational) of participants.

Conclusions: Support networks of FCGs of PWBT are highly variable. Most FCGs had at least some support in each category, with the most people in hands on and emotional support, but communication and financial support were less populated. This data provides important information for targeting interventions to address support needs in FCGs with PMBT.

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A016

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A PCORI/REACHNET FEASIBILITY STUDY ON THE LANDSCAPE OF END-OF-LIFE CANCER CARE IN THE DEEP SOUTH

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Background: The Research Action for Health Network (REACHnet) is 1 of 13 clinical data research networks (CDRN) funded by the Patient Centered Outcomes Research Institute (PCORI). REACHnet connects multiple health care systems; data by creating a single healthcare record for each person within the database. REACHnet has longitudinal data on 5 million patients in Louisiana and Texas. This study aims to test the feasibility of using the database to examine whether race and specific comorbidities account for disparities in the quality of end-of-life care received by cancer decedents.

Methods: This study uses a PCORI-funded REACHnet database on cancer, which will be linked to tumor registry data on cause of death. Race and comorbidity are identified through the PCORnet Common Data Model. The indicators of lower quality end-of-life care in cancer are chemotherapy use less than 14 days before death, more than one ED or ICU visit in last month, inpatient hospitalizations in last month, mechanical ventilation, death in hospital, hospice enrollment less than 3 days before death, and lack of hospice.

Results: We provide an actionable overview of key steps toward partnering with a PCORI-funded CDRN. In support of feasibility of using REACHnet, we conducted a successful initial query of the system, identifying 1,256,765 total patients from the Tulane and Ochsner health systems, including 21,000 decedents, and 6,202 decedents with a cancer diagnosis on record. We are now partnering with the tumor registry to narrow the database to only those patients with cancer listed as the cause of death and expect to have the final database in October 2017. Using the REACHnet-derived database, we will test our hypothesis that African American patients receive poorer quality end-of-life care, and explore whether comorbid health conditions common in the Deep South (e.g., obesity, cardiovascular disease, tobacco dependence, alcohol dependence) also account for variation in the quality of end-of-life care.

Discussion: As a feasibility study, we demonstrated that it is possible to acquire data using REACHnet. Our team's experience can provide practical strategies for other investigators seeking to utilize PCORnet databases, with the hope of promoting "big data" research within the medical systems of the Deep South and across the country. Findings may have implications for understanding trends in end-of-life care in a racially diverse segment of the U.S. that has received limited attention.

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A017

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A REVIEW OF ETHNIC DIFFERENCES IN SURVIVAL AMONG LUNG CANCER PATIENTS: EVIDENCE TO SUPPORT THE HISPANIC HEALTH PARADOX?

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Introduction: The Hispanic Health Paradox refers to the finding that despite a significantly worse risk factor profile, Hispanics/Latinos experience lower incidence of many diseases and have lower mortality rates than non-Hispanic Whites (NHWs). For lung cancer, the leading cause of cancer death in the United States, Hispanics have significantly lower incidence rates. However, it is unclear whether there is an accompanying survival advantage for Hispanic patients after lung cancer diagnosis. We conducted a review of papers that explored ethnic differences in lung cancer survival to help determine whether the Hispanic mortality advantage extends to survival in the context of lung cancer.

Methods: Studies were identified through: 1) PubMed search for papers from January 1, 2011 to September 22, 2017 using three key categories (Hispanic/Latino, lung cancer, and survival), 2) Search of identified paper reference sections, and 3) Contacting key authors for any additional papers or data. This approach yielded 98 candidate articles. To be included, publications had to include a direct survival comparison between NHWs and Hispanics with lung cancer. The review of abstracts eliminated 62 papers and full review of the remaining 36 papers yielded a final sample of 11 papers.

Results: Data were reported from various subsets of the Surveillance, Epidemiology, End Results (SEER; 5 studies) database, the California Cancer Registry (4 studies), the Lung Cancer Mutation Consortium (LCMC; 1 study), and Cancer Care Outcomes & Surveillance Consortium (CanCORS; 1 study). Eight of the 11 studies had either unadjusted or adjusted models demonstrating a survival advantage among Hispanic lung cancer patients compared to NHWs (7–27% lower risk of overall mortality; 3–24% lower risk of cancer-specific mortality). One study reported no significant difference. Two studies focusing on non-smokers with lung cancer reported worse survival for Hispanics than NHWs, but this association disappeared in one study when the model excluded treatment variables.

Conclusions: This review supports a Hispanic advantage in lung cancer survival. Determining the strength of association based on variable adjustment, disease stage, and tumor type may help to clarify these effects. Future work should also explore potential moderating and mediating pathways, including sociocultural/interpersonal influences, biological factors, and health behaviors to inform psychosocial and behavioral interventions.

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A018

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“FOLK THEORIES” OF THE CAUSES OF INSOMNIA AMONG CANCER SURVIVORS: ASSOCIATIONS WITH SURVIVOR CHARACTERISTICS

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Background: Patients' illness beliefs can affect treatment selection, satisfaction, and adherence. In people with insomnia, causal attributions of sleep disturbance are associated with perceived treatment efficacy. Yet unknown are the causal attributions patients make about insomnia following medical illness. This study describes cancer survivors' causal attributions of insomnia and whether these beliefs differ by key sociodemographic characteristics.

Methods: Cancer survivors meeting DSM-5 criteria for insomnia disorder were assessed prior to randomization in an insomnia treatment trial. Survivors endorsed how much they agreed that 12 different factors were causally related to their insomnia using the Causal Attributions of My Insomnia scale. Survivors also self-reported sociodemographic factors of age, gender, race, and marital status. Multinomial logistic regression was used to examine the association of item agreement with patients' sociodemographics. Latent class analysis (LCA) was used to examine patterns of agreement across items and whether survivors' sociodemographics were associated these patterns.

Results: Survivors (N=160, age M=62 [SD=12], 57% female, 70% white, 51% partnered) more commonly agreed that emotions (77%), thinking patterns (76%), sleep-related emotions (65%), and sleep-related thoughts (57%) were causally related to their insomnia. Survivors more commonly disagreed that developmental factors (69%) and genetics (68%) contributed to their insomnia. Younger, female, and partnered participants were more likely to agree with particular causal attributions ($p < .04$); effects on agreement by race differed by causal attribution ($p < .04$). In the LCA, three classes of item agreement were identified (AIC=3131, BIC=3404): Broad Agreement (estimated 40% of population share), Unsure (13%), and Broad Disagreement (47%). Older survivors were more likely to belong to the Broad Disagreement group relative to Broad Agreement (B=0.05, $p = .03$).

Conclusion: Cancer survivors with insomnia commonly reported belief that thoughts and emotions were contributed to their sleep disturbance, although younger, female, and partnered survivors were more likely to endorse these beliefs. Findings provide important information to the implementation and efficacy of personalized insomnia treatment for cancer survivors, as attending to illness beliefs during shared decision making for insomnia treatment may improve patients' satisfaction, adherence, and clinical outcomes.

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A019

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ADDRESSING ONCOLOGY AND PRIMARY CARE COORDINATION FOR CANCER PATIENTS AND SURVIVORS FROM DISADVANTAGED POPULATIONS

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Introduction: Oncology and primary care coordination remains a significant challenge in many U.S. health care settings, especially in systems that manage the care of disadvantaged populations. This study examined the strengths, needs, and barriers to effective communication and coordination with oncology providers as reported by a variety of primary care providers (PCPs) and staff employed in a federally qualified health center in Tucson, Arizona.

Method: The team conducted three focus groups (n=32) and coded the transcripts to identify dominant themes and explore variation within those themes, using constant comparative method, which is an iterative approach to analysis that aims to guide further data collection. Purposive sampling will guide the conduct of in-depth interviews that further explore the findings from the focus groups.

Results: Primary emergent themes included barriers to PCP-oncology team-based care, which centered on gaps in communication with oncology providers and offices, and the challenges of relying on patients to convey information about their oncology care. Providers articulated the need for more information regarding surveillance and long-term effects of cancer treatment, as well as clearly defined recommendations for follow-up visits with primary care. Clinic staff described patients'; need for additional support in adherence to recommended therapies and survivorship care, including financial assistance or community resources, linguistically appropriate care, and patient-centered communication. Participants suggested expanding survivorship care plans to include information about patient support networks and resources for extending identified support through psychosocial programming.

Discussion: Results suggest the need to enhance survivorship navigation that bridges the oncology-PCP care gap, especially for patients from disadvantaged populations. This formative research can help inform navigation and survivorship care planning efforts that incorporate culturally and linguistically appropriate care.

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A020

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ADULT ATTACHMENT PREDICTS FEMALE CANCER PATIENTS' HEALTH RECOVERY

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Cancer diagnosis is life changing and resulting stress can be manifested in poor quality of life (mental and physical functioning) over time. Lesser known is the extent to which adult attachment orientations around the time of diagnosis relate to longer-term patient-reported outcomes (PROs) of mental and physical functioning, and whether gender moderates the associations. This study aimed to extend current knowledge by investigating them.

Newly diagnosed colorectal cancer patients (Stage I to IV) participated in the longitudinal study (54% female; 55 years old; 57% Hispanic; 3-month post-diagnosis at enrollment). Self-reported gender and adult attachment orientations (MAQ: secure, avoidant, anxious-ambivalent worry, and anxious-ambivalent merger) were measured around the time of diagnosis (T1). PRO mental and physical functioning (MOSF-12) were assessed at T1 and again 11 months later (T2: n=47). Age, ethnicity, cancer stage, perceived cancer-specific stress, and outcomes at T1 were covariates.

Cancer patients reported mental and physical functioning that were below the 25th percentile of the US norm at both T1 and T2, which worsened at T2. General linear modeling simultaneously predicting PRO mental and physical functioning revealed that avoidant attachment related to improved mental functioning ($B=6.07, p<.04$), controlling for the effects of covariates. Furthermore, greater anxious-worry attachment related to more improved physical functioning, which was the case only among female patients, $B=11.63, p<.05$.

Findings provide evidence that adult attachment around diagnosis is associated with improved mental and physical functioning in patients across the illness trajectory. Findings suggest that patients'; use of self-soothing mechanisms, rather than reliance on external comfort from others, during the initial turmoil of cancer serves as a resource for better mental recovery over time. Anxiety and fear of losing relationships for females during adjustment to the diagnosis possibly elicits health behaviors that promote better physical functioning in the long run. Findings warrant further investigation for factors accounting for the nuanced role of gender in relationship quality linking to cancer patients'; improved health across the illness trajectory.

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A021

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ADVANCED CANCER AS A RISK FOR GENERALIZED ANXIETY DISORDER

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Background: Advanced cancer is associated with increased risk for major depressive episodes. Less is known about the relationship between advanced cancer and rates of Generalized Anxiety Disorder (GAD). This gap is notable given the association between anxiety and poor quality of life, difficulty communicating with the treatment team, chemotherapy dose delays and reductions, and worse response to symptom management in cancer patients. The purpose of this study was to examine whether advanced cancer poses distinct risk for GAD relative to the general population.

Method: Advanced cancer patients from Coping with Cancer (CwC), a prospective cohort study of advanced cancer patients, were compared to general population controls from the National Comorbidity Survey Replication study (NCS-R). CwC patients had a prognosis of ≤ 6 months to live. The general population comparison sample was propensity-matched using a 2:1 ratio to be demographically similar to the CwC sample. CwC and the NCS-R used DSM-IV compliant tools to assess GAD. CwC utilized the Structured Clinical Interview for DSM-IV and the NCS-R used the Composite International Diagnostic Interview Version 3.0.

Results: The advanced cancer patient sample (N=627) was predominately white (71.3%) and married (60.4%) and approximately half male (50.4%) with an average age of 59.5 years (SD=13.1). The general population sample (N=1,254) was predominately white (72.2%) and married (62.3%) and approximately half male (48.8%) with an average age of 59.7 years (SD=15.5). Advanced cancer patients were two times more likely than individuals in the matched general population sample to meet diagnostic criteria for GAD [OR=2.1; 95% CI=1.1, 4.1; $p=.02$]. Of the advanced cancer patient sample, 3% met diagnostic criteria for GAD compared to 1.4% of the general population comparison sample.

Discussion: Advanced cancer is associated with increased risk for GAD relative to the general population. These findings suggest that advanced cancer patients should be screened for anxiety, in addition to depression. Patients with elevated anxiety may benefit from psychosocial services to prevent escalation of anxiety symptoms to GAD. In addition, improving patient access to cost-effective evidence-based treatments for GAD such as cognitive-behavioral therapy may reduce anxiety associated with advanced cancer and, in turn, improve patient quality of life, engagement with the healthcare team, and treatment response.

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A022

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ASSOCIATION OF BODY ESTEEM WITH FITNESS AND BODY FAT AMONG COLORECTAL SURVIVORS

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Introduction: Survival rates among cancer survivors have improved, however treatment side-effects worsen their body esteem. Body esteem, or the satisfaction with one's appearance, can significantly affect quality of life and depression following cancer treatment. We examined the relationship between changes in fitness and body fat with changes in body esteem among colorectal survivors who participated in a randomized controlled trial that tested the effects of a 12-week telephone-based physical activity intervention.

Methods: Male and female colorectal survivors (< 5 years since diagnosis) were recruited to participate in a 12-week moderate-intensity physical activity intervention. Body esteem was assessed using the physical condition subscale of the Body Esteem Scale. Additionally, fitness was measured via the Treadmill walk test and body composition (fat mass) was assessed using bioelectrical impedance analysis (BIA- Quantum II R.J.L. system analyzer). All measures were assessed at baseline and follow-up visits (3, 6 and 12-month).

Results: 46 colorectal survivors (mean age = 57 years old, 57% female, 70% Stage 0–2, 30% Stage 3 disease) were randomized. Using generalized linear models, we examined whether changes in fitness and changes in body fat would predict changes in body esteem over time, controlling for group assignment, gender and disease stage. Improvements in fitness were associated with increased body esteem among men at 6-month ($b=6.50$, $SE=3.18$, $p=0.04$) and 12-month follow-ups ($b=1.36$, $SE=0.66$, $p=0.04$); while reductions in body fat were associated with increased body esteem at 12-months ($b=3.71$, $SE=1.79$, $p=0.05$) among women. In addition, controlling for gender and group assignment, improved fitness ($b=0.84$, $SE=0.36$, $p=0.03$) and reduced body fat ($b=5.99$, $SE=2.95$, $p=0.05$) among Stage 0–2 survivors were associated with significant improvements in body esteem at 12-months, with no changes in Stage 3 survivors.

Conclusions: Body esteem changes among colorectal cancer survivors have been underexplored. Results from this study showed that improved fitness and body composition can improve body esteem among these survivors; however, differences exist among gender and disease stage. Given the potential benefits of improved body esteem on quality of life and depression, these relationships merit further study.

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A023

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BARRIERS, FACILITATORS, AND DECISION MAKING PROCESSES ABOUT HPV VACCINATION FOR HMONG AMERICAN ADOLESCENTS

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Background: While vaccination rates against the Human Papilloma Virus (HPV) have been increasing for majority Americans, studies have shown that there are low rates of HPV vaccination in Asian American (AA) populations. There are no studies that have assessed HPV vaccination rates in the Hmong-American population, an AA group with reportedly greater risk of later stage cervical cancer and low cervical cancer screening rates. HPV vaccine rates in 2015 for Hmong children ages 9–17 at a local federally-qualified health center (FQHC) in Minnesota were 32% in girls and 20% in boys, which is lower than nationally published rates (60%). This exploratory community-based participatory action research study aimed to identify Hmong-American parents'; and adolescents'; barriers, facilitators, and decision-making processes about HPV vaccines for adolescents using the socio-ecological model in order to inform an educational program that could increase vaccine rates in Hmong-American adolescents.

Methods: Hmong 14–17 year-old patients who had received or had not received full HPV vaccine series and their parents at a local FQHC were contacted and invited to participate in focus groups. Bilingual-bicultural community researchers conducted 4 focus groups with parents (all mixed gender) and 4 focus groups with adolescents (2 groups of girls and 2 groups of boys) in English or in Hmong. Focus groups were audiotaped, transcribed and translated into English concurrently, and analyzed to identify major themes by using participatory thematic analysis.

Results: The following major themes emerged: (1) *Barriers:* Distrust of Western medicine; Concerns about side effects and pain; Lack of knowledge about HPV and HPV vaccine; Low risk-assessment; Access (barriers of language, literacy, cost, distance, limited time). (2) *Facilitators:* Adequate knowledge about HPV vaccine; Respect for authority (look to doctors, nurses, and teachers to educate, counsel, and recommend vaccine; accept if required for school). (3) *Decision-making processes:* Dependency (parents depend on clinics, schools, and teens to inform, educate, and counsel them); Variable patterns (some parents decide, some parents defer to kids, some kids accept or refuse parents'; decisions); Parent-teen factors influence variability (parents'; language, literacy, feelings; teen';s age, gender; parent-teen relationship).

Conclusion: Findings from the focus groups showed there were intrapersonal, interpersonal, institutional, community and policy level barriers and facilitators to HPV vaccine uptake among Hmong-American families. These results support that a linguistically-appropriate and culturally-tailored HPV educational program for parents and teens, which address these identified issues, could be successful in promoting HPV vaccine uptake and acceptability in the Hmong-American community.

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A024

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CANCER RISK FACTORS IN A SAMPLE OF SEXUAL MINORITIES: DIETARY INTAKE, OBESITY, ALCOHOL, AND TOBACCO

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Background: Research has found higher rates of certain behavioral cancer risk factors among lesbian, gay, and bisexual (LGB) people as compared to their heterosexual counterparts, including higher rates of alcohol intake, tobacco use, and obesity. However, findings have been inconsistent and warrant further investigation. The Nevada BRFSS has collected sexual orientation data for the past two years. The sexual orientation cases in this dataset have never been exclusively analyzed for behavioral cancer risk factors.

Purpose: The aims of this study were to 1) examine the prevalence of cancer risk factors among male and female sexual minority individuals, 2) examine the differences in cancer risk factors between male and female sexual minorities, and 3) examine the differences in cancer risk factors between sexual identities.

Methods: This study was a secondary analysis of 2015 NV-BRFSS data. The following variables were included in analyses: sexual orientation, sex, demographics, dietary intake (consumption of fruit juices, fruits, vegetables, beans or lentils), tobacco use, binge drinking behaviors, and last routine checkup. After coding the variables, descriptive and bi-variate analyses (chi-square, t-test, and ANOVA) were conducted. Statistical significance was set at 0.05.

Results: The sample (N = 133) was mostly female (63.9%), white (66.2%), single (60.2%) and urban-dwellers (81.2%). Among the total sample, 29.3% identified as gay/lesbian, 38.4% as bisexual, and 32.3% as other. Men were likely to report binge drinking than women (31.3% v 16.5%), and further analyses showed that gay men had the highest rate of binge drinking among the sexual orientation categories. Gay/lesbian people were more likely to be current smokers (41%) as compared to bisexual (33.3%) or other (14%). Although not statistically significant, gay/lesbian people had a higher rate of binge alcohol drinking (30.8%) as compared to bisexual (21.6%) and other (14%). Females were more likely to have a higher body mass index than men (28 vs 25.8). People who identified their sexual orientation as 'other'; were less likely to drink fruit juices (60.5%) compared to gay/lesbian (30.8%) and bisexual (37.2%).

Conclusions: This study established a rate of different cancer risk factors among sexual minority male and female individuals in a sample of Nevada residents, adding to the greater state of science. Statistically significant differences in binge drinking and tobacco were found between sex and sexual orientation. Sexual minorities who identify as 'other'; has been of recent focus to researchers, and this study highlights the differences between that group and gay/lesbian and bisexual groups.

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A025

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CERVIXCHECK: A SPIRITUALLY-BASED SMS INTERVENTION TO PROMOTE CERVICAL CANCER AWARENESS AMONG AFRICAN AMERICAN WOMEN

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Background/Purpose: On a national level, African American women have a 34% higher incidence of cervical cancer and are twice as likely to die of the disease when compared to White women. In response to the need to improve cervical cancer prevention and Pap test screening knowledge and utilization, we developed and pilot tested a 16-day SMS text message-based intervention. The CervixCheck study was designed to develop, pilot test, and evaluate the feasibility, acceptability, and initial efficacy of a spiritually-based SMS text messaging intervention aimed at increasing cervical cancer awareness and Pap test screening intention in church-attending African American women ages 21–65.

Methods/Approach: The Theory of Planned Behavior guided the development of the CervixCheck intervention. This presentation provides findings from Phase 3 of the study. Phase 3 utilized a non-experimental one-group pretest-posttest design to pilot test the intervention. Of the 52 participants at baseline, 46 completed the post-program survey.

Results/Findings: The current study suggests evidence for the early feasibility, high acceptability, and some initial efficacy of the CervixCheck intervention. There was a significant pre-post increase observed for knowledge about cervical cancer and the Pap test ($p = .001$) and subjective norms ($p = .006$). Findings post-intervention also revealed that 83% of participants reported being either “satisfied” or “very satisfied” with the CervixCheck intervention and 85% found the SMS text messages either “useful” or “very useful”.

Conclusions/Significance: A spiritually-based SMS text messaging intervention could be a culturally appropriate and cost-effective method of promoting cervical cancer early detection information to church-attending African American women.

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A026

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DAILY VARIATION IN COGNITIVE FUNCTIONING AMONG BREAST CANCER SURVIVORS: IMPACT OF FATIGUE AND DEPRESSED MOOD

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Background: One of the greatest concerns of cancer survivors is changes to their cognitive abilities. However, considerable variation has been observed with some persons reporting significant impairment, whereas others report being relatively unaffected. Moreover, little is known about cognitive functioning in daily life and whether other common symptoms that cancer survivors experience, such as fatigue and depressed mood, are related to cognitive performance. The goal of this study was to examine how fatigue and mood impact cognitive performance in daily life for breast cancer survivors.

Methods: We used ecological momentary assessment in which participants were prompted to complete brief surveys with mobile cognitive tasks five times daily over a 14-day period. Participants were provided with study smartphones programmed with tasks designed to measure processing speed, attention and memory. At each survey, participants provided ratings of their current fatigue and depressed mood on a visual analogue scale.

Results: Participants were 47 women (M age = 53.3 years) who were between 6 and 36 months post chemotherapy ($M = 17.3$ months) for early stage breast cancer (25.5% Stage I, 74.5% Stage II). There was high compliance with the EMA protocol with 92% of the surveys completed across the 14-day period. Between person differences accounted for over 60% of the variability in fatigue, mood, memory and processing speed was due to differences between individuals, but less than one-third of the variability in attention. Day to day fluctuations in fatigue were related to processing speed such that on days in which survivors rated their fatigue as approximately one SD unit higher than average, performance on the measure of processing speed was .3s slower ($p < .05$). Similar results were observed for the attention task, with accuracy decreasing by 1% on days in which survivors rated their fatigue one SD above their mean ($p < .05$). Depressed mood was unrelated to performance on any cognitive task.

Conclusion: In this sample of breast cancer survivors, we observed both individual differences in average daily cognitive performance but also performance fluctuations within survivors from day to day. On days in which a person rated themselves as more fatigued than usual, performance was worse on tests of speed and attention. Tailoring interventions for persons when they are most fatigued may lead to positive consequences for their cognitive performance.

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A027

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DEVELOPMENT AND EVALUATION OF A NOVEL PSYCHOEDUCATIONAL INTERVENTION FOR PATIENTS WITH PANCREATIC CANCER

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Background: Pancreatic cancer has one of the poorest prognoses amongst all cancers globally. The disease places substantial physical and psychosocial burden on patients and their loved ones. The associated distress and uncertainty can be amplified by unmet informational and support needs, but standardized and proactive approaches to provide information and support for patients with pancreatic cancer and their families are not routinely implemented. Therefore, we developed and implemented a brief psychoeducational intervention to improve knowledge about the disease and its psychosocial impact, satisfaction with care, and to reduce uncertainty.

Objective: To develop an acceptable intervention and evaluate the feasibility of its implementation in an ambulatory pancreatic cancer clinic at a large tertiary cancer centre.

Methods: (i) Development: We used the Schofield & Chamber’s framework for supportive care interventions to inform the development process. The Consolidated Framework for Implementation Research (CFIR) guided the intervention development and evaluation phases, to assess its feasibility and sustainability in our context using a multi-methods design. (ii) Evaluation: Feasibility outcome data were documented across the evaluation phase. Measures assessing illness uncertainty, satisfaction with care, and knowledge were administered at baseline and at 1 month. Semi-structured interviews were conducted with participants and clinical staff to inform feasibility and acceptability.

Results: A representative group of stakeholders was identified and collaboratively established the intervention, CALMING, with key considerations to ensure clinical relevance and sustainability including the content, target audience, and mode of delivery. CALMING was developed as a 1.5-hour group session led by an interdisciplinary team (i.e., nurse, social worker, dietitian) to address disease management, communication with loved ones and HCPs, personal and family impact of cancer, preparing for the future, and palliative and supportive care services. Preliminary findings will be discussed regarding the feasibility of implementing psychoeducation into routine care of those with progressive medical disease.

Significance: A group psychoeducational intervention for people affected by pancreatic cancer may reduce uncertainty and facilitate adaptation to this life-threatening disease. An implementation science approach to intervention delivery can improve uptake and sustainability in the clinical setting.

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A028

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DO INTERVENTIONS TO REDUCE EXCESSIVE ALCOHOL AMONG WOMEN NEED TO ADDRESS BREAST CANCER RISK?

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Background: Multiple authoritative reviews have concluded that even low levels of alcoholic beverage consumption can increase a woman's risk of developing breast cancer. However, many young women binge drink, and they may be unaware that alcohol intake increases their risk of developing breast cancer. The objective of this study was to examine perceptions about the influence of alcohol consumption on breast cancer risk among a national sample of females aged 15–44 years without a history of cancer.

Methods: We used 2011–2015 National Survey of Family Growth (NSFG) survey data to examine perceptions about alcohol intake and breast cancer risk among 11,300 females aged 15–44 years. We examined participant perceptions of whether drinking alcoholic beverages increases a woman's risk of developing breast cancer by demographic factors. Participants were asked, "Do you think that drinking alcoholic beverages increases a woman's chances of getting breast cancer?" Responses to this question included "a little", "a lot", "not at all", "no opinion", and "don't know".

Findings: Most participants believed consumption of an alcoholic beverage did not increase breast cancer risk (47.9%) or had no opinion (26.7%). An examination of breast cancer risk perceptions by race showed that a larger proportion of non-Hispanic (NH) Whites and NH-Blacks (50.8 and 48.3%) did not believe alcohol intake increased breast cancer risk when compared to Hispanics (42.1%; $p < 0.001$). Breast cancer risk perceptions by age (aged 15–29 and 30–44 years) showed that a similar proportion of younger and older participants did not believe alcohol intake increased breast cancer risk (48.3% and 47.5%). A similar proportion of participants with and without a family history of breast cancer (49.0% vs. 47.6%) and with or without a history of smoking (50.8% vs. 47.0%) believed that alcohol intake did not increase breast cancer risk.

Implications: Approximately three-fourths of females aged 15–44 years were unaware of the influence of alcohol intake on breast cancer risk. Also, knowledge of alcohol's effect on breast cancer risk did not differ by age, family history of breast cancer, or a history of smoking. These findings point to the need to disseminate information about alcohol intake and breast cancer risk and can be used to enhance the implementation of evidence-based interventions to reduce excessive alcohol among young women.

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A029

6:30 PM-7:30 PM

EVALUATING CERVICAL CANCER PREVENTION APPLICATIONS FOR EASE OF USE

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Smartphone applications have become an integral part of disseminating information for many types of health information. Smartphone ownership is higher among minorities, people who live in urban areas, and young person's age 18–29 years old and those without high school diplomas. African Americans and Hispanics show a greater rate of growth in tablet usage compared to whites. To date, there have been no studies to analyze cancer related smartphone applications to determine if health literate design features are built into applications that may be used by populations that are traditionally associated attributes of low health literacy such as low income, medically underserved, or minority populations. These population attributes have also been shown to have higher rates of advanced stage cancer diagnosis and higher mortality compared to other groups. Younger populations may be prompted to seek information through smartphone applications due to advances in effective vaccination and screening. The aim of the study is to identify and analyze apps targeted towards cervical cancer prevention and screening to determine ease of use and literacy. Application content was analyzed based on that is recommended for creating health literate mHealth applications which is an evidence based guide for designing health websites that uses strategies for usability and health literacy. The Apple App store and Google play store were used to identify smartphone applications. Key words used to identify applications were "cervical cancer prevention and screening."

Preliminary results/findings: Using the selected keywords, 17 apps from the Apple App Store and 19 apps were identified from the Google Play Store. Content was analyzed using Health Literacy Online Strategies for creating health literate mHealth applications. During the preliminary evaluation, 3 apps from the Apple App Store and 2 from the Google Play Store were examined using the strategies for writing actionable content which is one of the six strategies. Preliminary findings show 80% of apps reviewed showed evidence of the following criteria: put the most important information first, describe the health behavior-the basics, stay positive and realistic (include benefits of taking action), and write in plain language. Further analysis include evaluating apps identified by the keyword search and evaluating them using additional health literacy online strategies to determine if cervical cancer screening and prevention information is effectively communicated to impact behavior change in populations at risk and populations that are accessing application information at higher rates. Evaluation based on the evidence based health literacy online strategies can provide consistency of cervical cancer prevention information to ensure populations are able to make effective health decisions.

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A030

6:30 PM-7:30 PM

EVOLVING RECOMMENDATIONS AND TRENDS OVER TIME IN PAP SCREENING WITH HPV CO-TESTING

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Background: In 2012, the U.S. Preventive Services Task Force, the American Cancer Society, and the American College of Obstetricians and Gynecologists updated their cervical cancer screening guidelines to recommend Papanicolaou (Pap) testing every three years for women ages 21–65 years or Pap testing with HPV co-testing at 5 year intervals for women ages 30–65 years. ACOG recommends Pap/HPV co-testing as the preferred screening method for women ages 30–65. We assessed current use of Pap with HPV co-testing and described trends over time in both Pap and Pap/HPV co-testing in our local population.

Methods: We used the research infrastructure of the Rochester Epidemiology Project (REP) to assess Pap screening and Pap/HPV co-testing among women ages 16 years and older eligible for routine screening, living in Olmsted County, Minnesota each year from 2005–2016. We extracted all Current Procedure Terminology codes for Pap and HPV testing in this population from the REP electronic indices. Three-year moving prevalence rates of screening were calculated as a proportion of the eligible population. Trends in Pap screening and co-testing were modeled using negative binomial regression for the following age groups: 16-<21; 21-<30; 30-<65; and 65+ years.

Results: The population eligible for Pap screening each year ranged from 43,912 in 2016 to 49,844 in 2014. Within each age group, significant declines in Pap screening at least every three years were observed from 2005 to 2016. Declines were most dramatic among those aged 16 <21 years (from 19.2% in 2005 to 1.2% in 2016, $p < .001$) and among those aged 65+ years (from 17.2% in 2005 to 3.2% in 2016, $p < .001$). Pap screening with HPV testing at least every three years increased significantly among women aged 30-<65 years (from 0.91% in 2005 to 25.4% in 2016; $p < .0001$). A slight increase in co-testing was also observed among those aged 65+ years ($p < .05$), although overall rates were low (e.g. 2.61% in 2016). A significant decline in Pap screening with HPV testing was observed among those aged 16-<21 years ($p < .01$) and no change was observed among those aged 21-<30 years.

Conclusions: Overall, rates of Pap screening in our population have declined, even among age groups for whom screening is recommended. However, an increase in Pap with HPV testing was observed for women aged 30-<65 years demonstrating modest adoption of pertinent recommendations in clinical practice.

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A031

6:30 PM-7:30 PM

EXAMINING SEXUAL FUNCTIONING AFTER RADICAL PROSTATECTOMY

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Introduction Prostate cancer is the most common cancer in men. Considering the common iatrogenic side effects its treatment, including the impact on sexual functioning, it is important that clinicians and their patients understand both the risks of each treatment option and how various factors influence quality of life after treatment, in order to ensure an educated treatment decision. This project examined the longitudinal trajectories of sexual quality of life after surgical treatment of prostate cancer. We hypothesized that the following four between-subjects factors would influence the rate of sexual functioning recovery: age, pre-treatment sexual functioning, type of surgical approach (open vs. robotic), and degree of nerve-sparing (none, modified, and bilateral). Methods Participants were recruited from the Huntsman Cancer Institute (HCI) and included 527 men preparing for prostatectomy. Participants were administered the Sexual Functioning subscale of the long version of the Expanded Prostate Cancer Index Composite prior to treatment, at baseline (~3 months post-surgery), and up to 9 times across 5 years. Results Multilevel modeling procedures were used. Results suggested that the average post-treatment baseline level of sexual functioning after surgery was 10.98, as measured by the 100-point EPIC subscale. For the intercept (i.e., post-treatment baseline), there were significant main effects of age ($B = -0.28$, $SE = .14$, $p < .05$), degree of nerve sparing ($B = 11.07$, $SE = 1.93$, $p < .001$), and pre-treatment sexual functioning ($B = 0.32$, $SE = .03$, $p < .001$). Of the level-2 fixed effects, the degree of nerve sparing had the greatest impact on baseline post-surgery sexual functioning, particularly for those who had bilateral nerve-sparing procedures ($B = 18.61$, $SE = 2.22$, $p < .001$). It was hypothesized that pre-treatment sexual functioning, age, degree of nerve sparing, and surgery type would vary between men over time, influencing their sexual functioning recovery rates; however, only pre-treatment sexual functioning significantly affected recovery rates ($B = 0.004$, $SE = 0.001$, $p < .01$). Conclusion Thus, overall, results suggested that men differed in their levels of sexual functioning after treatment, as measured by the EPIC questionnaire, both in terms of levels early after surgery and in their rates of recovery over time. This has clinical implications for improving the accuracy of the information provided to men about what to expect across time after surgery.

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A032

6:30 PM-7:30 PM

FACTORS INFLUENCING NURSE PRACTITIONER PROVIDER RECOMMENDATIONS OF THE HPV VACCINE

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Background: A majority of men and women are exposed to Human Papillomavirus (HPV), increasing their risk for HPV-related cancers. The HPV vaccine is an effective cancer prevention strategy routinely recommended for pre-teens. Despite the efficacy and safety of the HPV vaccine, national rates remain low. Recommendation by a healthcare provider is the strongest predictor of parents choosing to vaccinate their preteen. Although the President's Cancer Panel, Centers for Disease Control and Prevention and American Academy of Pediatrics strongly endorse routine administration of the HPV vaccine, the National Immunization Survey of Teens cites lack of provider recommendation as one of the top five reasons given by parents who did not vaccinate their preteen. Little research has been conducted to understand the recommendation practices of nurse practitioners (NPs).

Purpose of study: This study assessed barriers and facilitators impacting NP recommendations of the HPV vaccine to parents of girls and boys 11 years of age and older. Theoretical framework The Theory of Planned Behavior (TpB) was used to assess attitudes, norms, perceived control, and intentions of NPs to recommend the HPV vaccine to the parents of preteens.

Methods: A descriptive design was used to conduct an online survey of NP's in southwestern Pennsylvania. The survey utilized constructs of the TpB to evaluate HPV vaccine recommendation practices. Data were analyzed using descriptive statistics. Major findings Respondents recommended the vaccine more often for females and reported parents prefer vaccination at an older age. Most NPs held favorable attitudes and reported intention and recent behavior of recommending the vaccine, yet cited recommendation practices in the past month of only 67% and 39% for females and males respectively. NP's did not identify provider recommendation as the most important factor affecting parental decision to vaccinate, ranking it as third and fourth in importance for girls and boys respectively.

Conclusion: This study enhances our understanding about NP recommendation practices, revealing pre-teen gender and age differences that can influence strength of recommendation. NPs did not recognize the importance of provider recommendation despite evidence as a strong predictor influencing parents' decision to vaccinate.

Implications: The results of this study can inform education for NP providers to promote strong provider recommendation of the HPV vaccine to parents.

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A033

6:30 PM-7:30 PM

FALSE-POSITIVE SCREENING EVENTS AND WORRY ABOUT CANCER RISK PREDICT RISK-REDUCING SURGERY USE BY WOMEN AT HIGH-RISK FOR CANCER

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Background: Studies of cancer screening have found that false positive screening events (FPSE) can affect worry about cancer risk, and screening program use. We sought to explore whether worry might also influence the use of risk-reducing ovarian surgical procedures by women at high risk for cancer.

Methods: We examined the effects of ovarian cancer screening on participants in a randomized controlled trial (RCT) that compared two screening strategies that both employed serum markers followed by imaging to assess the impact of FPSE on worry about risk for ovarian cancer and use of prophylactic surgery. In total 1,100 women were enrolled, including 234 women aged 25–80 with a documented BRCA1/2 germ-line mutation (Risk Group 1) and 866 women aged 35–80 with a pedigree warranting testing for inherited cancer susceptibility (Risk Group 2). Women were screened semi-annually, and were followed for surgical procedures and cancer diagnoses for up to 6 years.

Results: Upon enrollment in the study 342 31% of women reported moderate or severe levels of cancer worry. During screening 258 women experienced one or more FPSE. FPSE were associated with transient elevations in women's levels of worry about their ovarian cancer risk that generally resolved within 6 months. Risk-reducing prophylactic bilateral salpingo-oophorectomy (pBSO) was predicted by levels of worry about ovarian cancer risk at study enrollment among mutation carriers (HR 1.74; $p < 0.01$). FPSE predicted subsequent pBSO among women with a high-risk pedigree who did not have a known mutation at the time of their study enrollment (HR 2.31; $p < 0.01$). Women receiving pBSO during the course of the study averaged 44.5 years in the mutation carrier group and 57 in the high-risk pedigree group.

Conclusions: Worry about ovarian cancer risk predicted use of preventative surgery among high-risk women with BRCA1/2 mutations enrolled in an ovarian cancer screening program. FPSE predicted risk-reducing ovarian surgery among high-risk women without a known mutation at the time of screening program enrollment. Overall, it appears that women at high-risk for ovarian cancer due to a family history or known mutation may choose to postpone surgery and participate in screening but over time while in screening do respond to cancer worry and screening events by revisiting their decisions on risk reducing surgery.

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A034

6:30 PM-7:30 PM

FRAMING OF SKIN CANCER CONTROLLABILITY INFLUENCES PERCEPTIONS OF CANCER BLOGGERS

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Introduction: Some cancers, particularly those that are perceived as controllable such as lung and skin, carry a stigma. The current study aimed to understand how the perceived controllability of skin cancer may influence perceptions of and attributions about individuals with cancer.

Method: Participants, 306 undergraduates, read a blog entry written by a fictional individual with skin cancer that was described as being caused by a family history (low controllability), working outdoors (medium controllability), or using indoor tanning (high controllability). Participants then answered questions regarding attributions about the individual, perceptions of character, desired social distance, and expectations of posttraumatic growth, as well as background and demographic questions.

Results: Participant ages ranged from 18 to 44 ($M = 20.6$, $SD = 2.61$). Forty percent were White, 38% Asian, and 6% Black. Due to gender stratification, 50% were female and 50% were male.

Using ANCOVA, with gender, age, and experiences with cancer as covariates, the three versions of the blog were compared.

For attributions about the individual with cancer, significant differences were found across groups, $F(2,305) = 35.37$, $p < .001$. LSD post-hoc testing found that all pairwise comparisons resulted in significant differences, with the most positive attributions associated with the family history frame ($M = 2.15$, range = 1–7), and the most negative attributions associated with the indoor tanning frame ($M = 3.13$).

For trait perceptions about the individual with cancer, significant differences were found across groups, $F(2,305) = 3.29$, $p < .05$. LSD post-hoc testing found that one pairwise comparison resulted in significant differences, between family history (more favorable, $M = 2.84$, range = 1–7) and indoor tanning (less favorable, $M = 3.12$).

Significant differences were not observed for the outcome variables posttraumatic growth ($p = .70$) and social distance ($p = .21$).

Discussion: The findings of this study indicate that a cancer blogger was perceived unfavorably when describing their cancer diagnosis using a frame relating to a lifestyle factor, compared to using a frame relating to a family history. Participants were also more likely to attribute the cancer diagnosis to the lifestyle-frame blogger, with attribution items measuring constructs such as blame and sympathy. These results demonstrate stigmas faced by those diagnosed with cancers that may be perceived as more controllable.

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A035

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GOING THROUGH CANCER TOGETHER AS A FAMILY: EXPERIENCES OF HISPANIC MOTHERS DIAGNOSED WITH CANCER

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Approximately 1.5 million cancer survivors are parents of minor children, with approximately 80% of these survivors being women under the age of 50 years. Approximately 1/3 of these mothers are in the early phases of cancer treatment and recovery. Most of what is known about the challenges of parenting dependent children following a cancer diagnosis is based on studies with NHW mothers. However, relatively little is known about the experiences of Hispanic mothers diagnosed with cancer and their families, particularly those residing along the U.S.-Mexican border. This is unfortunate given that Hispanics demonstrate significant disparities in cancer care, outcomes and overall disparities compared to NHWs.

Purpose. The purpose of this study was to describe, in their own words, the lived experience of Hispanic mothers who are in the early phases of cancer treatment and recovery while concurrently rearing dependent children.

Method. Nine mothers participated in focus groups interviews. Their data were transcribed verbatim and coded using inductive content analysis within a framework of grounded theory.

Results. Analysis revealed 14 domains that organized participants'; responses around four key areas. Although one group of domains highlighted the mothers'; perceived advantages of being extremely open and honest with their children about the cancer (e.g., maintaining child';s trust; facilitating child';s coping; helping child to understand what to expect), a second group of domains highlighted the mothers'; struggles in knowing what and how much to share with their child. A third group of domains related to the mothers'; self-evaluation regarding the quality of her maternal role, guilt surrounding her availability to her children during the recovery phases, and fear over how the cancer would impact their children in the long run. A fourth major grouping of domains characterized the behaviors of the children which served to 1) protect and care for their mother, 2) preserve her role as "mom," and 3) engage in their own self-care so that mom could conserve her energy to fight her cancer.

Conclusion. In these families, the environment in which the Hispanic mothers managed the early phases of treatment and rehabilitation, was co-created with their children. Mothers and their children mutually protected each other from the negative impacts of cancer.

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A036

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HEALTH COMPETENCY BELIEFS AND HEALTH-RELATED QUALITY OF LIFE AMONG SURVIVORS OF PEDIATRIC CANCER AND HEALTHY CONTROLS

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Pediatric cancer survivors are at risk for chronic late-effects that require self-management throughout adulthood. However, the unique experiences associated with cancer diagnosis and treatment could alter survivors' health beliefs including their perceptions of and their competency to manage their health. Given that many survivors will be required to self-manage one or more late-effects, understanding survivors' health beliefs is important for identifying the support needs of survivors. Therefore, this study will examine whether health beliefs differ between survivors of pediatric cancer and a matched sample of healthy peers and whether health beliefs are associated with HRQOL in both groups. We predict that survivors will report poorer psychological functioning, health perception, competency, and autonomy than their healthy peers and will be significantly associated with HRQOL. We also predict that females will be at particular risk for poor HRQOL and psychological functioning.

Survivors (n=54) and healthy peers (n=54) completed measures about health competency beliefs (HCB) and HRQOL. T-tests were conducted to examine differences in HCB and HRQOL between survivors and healthy peers, and females and males. Separate linear regressions were conducted to investigate the association between HCB and HRQOL in each group.

Survivors reported poorer psychosocial functioning, total HRQOL, competence, autonomy, and health perception scores than their healthy peers. Female survivors reported poorer physical functioning and total HRQOL than male survivors; no gender differences were observed in the healthy peer group. In survivors, total HRQOL and psychosocial functioning were positively associated with cognitive competence and health perceptions, and physical functioning was positively associated with health perceptions. In healthy peers, total HRQOL and psychosocial functioning were positively associated with health perceptions, and physical functioning was associated with competence.

As predicted, survivors reported poorer total HRQOL and physical functioning and less competent health beliefs than their healthy peers. Female survivors are at particular risk compared to both male survivors and healthy peers, reporting poorer physical functioning and total HRQOL. In both groups, cognitive competence and health perceptions were associated with HRQOL. These findings highlight the importance of targeting health beliefs to optimize HRQOL in survivors of pediatric cancer.

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A037

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HEALTH SERVICE UTILIZATION, HEALTH STATUS, AND CANCER RISK BEHAVIORS AMONG CANCER SURVIVORS WITH MENTAL HEALTH CONCERNS

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Introduction: Psychosocial distress and mental health problems (MHPs) can affect cancer survivors' health outcomes. Less is known about differences in health behaviors, health status, and health care access and utilization among survivors with versus without MHPs.

Methods: Combined 2014 and 2016 Behavioral Risk Factor Surveillance System self-reported data from 10,089 survivors were analyzed. We conducted descriptive statistics and significance testing to compare factors among survivors with and without MHPs (depressive symptoms or frequent mental distress).

Results: Survivors with MHPs (29%), versus without, were younger, divorced/separated/widowed, unemployed and had less education. Most survivors with MHPs had health care coverage, routine check-ups and flu shots, but were less likely than those without MHPs to have health care coverage ($p < .001$). Survivors with MHPs (versus without) were more likely to report uncontrolled pain caused by their cancer or cancer treatment (32% vs. 14%, $p < .001$). Most survivors with MHPs were adherent to recommended colorectal, cervical and breast cancer screening, however, female survivors with MHPs (versus without) were less likely to report on-time breast cancer screening ($p < .001$). Survivors with MHPs also reported higher prevalence of fair/poor health status (54% vs 26%), asthma (23% vs. 9%), current smoking (30% vs 12%), physical inactivity (41% vs 29%), and inadequate sleep (45% vs. 28%).

Conclusion: Survivors with MHPs reported poorer health status, adverse health behaviors, uncontrolled pain, and lower prevalence of on-time breast cancer screening than survivors without MHPs. Cancer prevention and health promotion efforts need to include caring for the mental health needs of survivors.

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A038

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PATIENT-ONCOLOGIST NONVERBAL CONVERGENCE MEDIATES RACIAL ATTITUDES AND OUTCOMES IN RACIALLY DISCORDANT INTERACTIONS

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Introduction: Patient and physician racial attitudes (e.g., patient suspicion; physician implicit racial bias) influence communication and outcomes of racially discordant clinical (Black patients, non-Black physicians) interactions. Racial attitudes are likely manifested in nonverbal behaviors during interactions. Communication Accommodation Theory (CAT) posits that the relationship between attitudes and outcomes is mediated by the extent to which nonverbal behaviors between participants in interactions become more similar (convergence). This study investigated associations between patient and physician racial attitudes, nonverbal convergence during racially discordant oncology interactions, and interaction outcomes.

Method: Data were 114 video recordings of treatment discussions with Black patients and their non-Black oncologists, self-reported attitudes (oncologist implicit bias; patient suspicion of medical care and perceived past discrimination), and post-interaction perceptions (patient perceptions of oncologist patient-centeredness; oncologist perceptions of patient treatment-related attributes). Five one-minute slices from each interaction were extracted and randomized. Trained coders assessed frequency/duration of facial behaviors (smiling, eye gaze); body behaviors (lean, orientation, openness); and paraverbal behaviors (continuers, talk time, word count). Longitudinal dyad discrepancy models determined discrepancies in frequency/duration of behaviors between patients and oncologists in each slice. A multilevel latent growth model determined whether attitudes influence nonverbal convergence across interactions. Multilevel structural equation models determined whether attitudes influence nonverbal convergence across the interaction and, in turn, outcomes.

Results: Patient discrimination influenced convergence of openness frequency, continuer frequency, talk time and word count. Patient suspicion influenced convergence of gaze duration, openness duration, continuer frequency, and word count. Convergence of talk time and continuer duration mediated the effects of suspicion and discrimination on patient perceptions of oncologist patient centeredness and physician perceptions of patient attributes.

Conclusion: As predicted, the association between racial attitudes and outcomes was mediated by patient-oncologist nonverbal convergence. Future research should examine these relationships in other settings, using longitudinal designs to determine effects on treatment.

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A039

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PERCEIVED COGNITIVE PROBLEMS AMONG CHRONIC MYELOGENOUS LEUKEMIA PATIENTS TREATED WITH TYROSINE KINASE INHIBITORS

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Background: Targeted therapies such as tyrosine kinase inhibitors (TKIs; e.g., imatinib) are increasingly being used to treat many forms of cancer including chronic myelogenous leukemia (CML). Anecdotal reports suggest that cognitive problems may be common among CML patients treated with a TKI. To our knowledge, no studies have conducted a detailed quantitative investigation of perceived cognitive problems among CML patients treated with TKIs. Accordingly, the goals of this first study were to: 1) describe perceived cognitive problems among CML patients treated with TKIs, and 2) compare their perceived cognition to that reported by individuals without cancer.

Method: CML patients treated with the same oral TKI for ≥ 6 months were recruited at Moffitt Cancer Center or Memorial Sloan Kettering Cancer Center. All participants provided socio-demographic information and completed a self-report measure of perceived cognitive problems (i.e., the Everyday Cognition Measure), which assesses perceived problems in memory, language, visual/spatial, planning, organization, divided attention, and satisfaction with cognition.

Results: Data were available for 51 patients (age $M = 52$ years, 47% female, 82% some college) and 87 non-cancer controls (age $M = 53$ years, 54% female, 91% some college). Controls did not differ from patients with respect to age, gender, or education (p values $> .05$). Patients reported worse memory, planning, and divided attention compared to controls (p values $< .05$) and less satisfaction with their cognition ($p < .001$). Patients and controls did not differ with respect to language, visual/spatial, or organizational abilities (p values $> .05$). Among patients, perceived cognitive problems were not associated with time on TKI treatment (p values $> .05$).

Conclusions: Results indicate that CML patients treated with TKIs are more likely to report problems with their cognition compared to non-cancer controls. Specifically, deficits were reported in memory, planning, and divided attention abilities. Future studies should seek to better understand the impact of TKIs on cognition using prospective, longitudinal designs and incorporating neurocognitive tests in addition to patient-reported measures.

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A040

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PERCEPTIONS OF CARE COORDINATION AND DISTRESS FOR ETHNICALLY DIVERSE OLDER ADULTS LIVING WITH ADVANCED CANCER

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Ethnically diverse older adults with advanced recurrent cancer have been shown to experience concerns about care coordination, distress, and have unmet supportive care needs (SCNs) yet many display resilience during treatment. Despite the increasing number of older mostly minority adults living with advanced cancer in poorly resourced urban communities, there is a lack of research that describes the impact of distress on their supportive care needs and care coordination. In addition, researchers have not explored potential differences in perceptions of these issues by urban ethnically diverse older adults. To better understand the perceptions of these patients we conducted semi-structured interviews with 31 community dwelling older adults with advanced or recurrent cancer who received oncology care at an urban academic medical center (20 men / 11 women; African Americans (35%); Caucasian (xx%); mean age 70 years). The most prevalent cancer diagnoses were prostate (32%), head and neck (29%) and breast (10%). 45% were actively receiving treatment. Findings demonstrated that patients (1) interpret care coordination as synonymous with trusting relationships and respectful communication with providers (2) are a valuable active partner in the healthcare team and that overall their SCNs were met, (3) believe race does not play a role in cancer development because cancer strikes randomly, (4) believe race can play a role in cancer care and (5) find inner strength that comes from God and family/community support. Participants exhibited personal strength, trust, awareness and resilience, despite limited resources.

Healthcare providers can promote care that emphasizes and acknowledges the skills, achievements and resilience of older adults when interacting with patients and families along the cancer care continuum. Nurses specifically are positioned to facilitate patient participation in care by developing trusting respectful relationships which provide important opportunities for need assessment, patient teaching, and the development of treatment plans that are congruent with the priorities of the older adults with advanced or recurrent cancer.

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A041

6:30 PM-7:30 PM

PROGRAM MANAGERS' REPORT OF IMPLEMENTATION CHALLENGES AND STRATEGIES FOR PEER SUPPORT PROGRAMS IN CANCER

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Research shows that peer support is effective across the continuum of cancer prevention, care, and survivorship. However, little is known about how peer support is provided outside of research settings and on a regular, day-to-day basis. Following a systematic search of NCI-designated cancer centers and a web search of key words ("peer support," "navigator," etc.) for cancer peer support programs, we completed semi-structured phone interviews with program managers of 29 cancer peer support programs in the US, Canada, and England.

We found that peer support in cancer is widely implemented and highly valued by patients and their families. This value of peer support was indirectly underscored by the observation that many patients found it helpful just to be given the name of peers who had experienced similar cancer or treatment, even without ever contacting them. Peer supporters and those they help especially appreciate being connected to each other through a community or network; programs that provided multiple avenues for involvement seemed to have the greatest retention and program engagement of both supporters and support seekers.

Program managers described a variety of challenges to implementing peer support. Inconsistent funding and reliance on a constant flow of volunteers are primary obstacles. Additionally, nearly every program cited diversity and accessibility as a major challenge. Because both supporters and recipients are reported to be mostly older, white women, problems with diversity are better understood in social network terms than with an assumption that some groups are fundamentally disinterested in peer support. Thus, recruiting peer supporters from diverse communities is a priority. A final challenge identified was physician resistance. Although nurses and social workers generally encourage programs, some oncologists continue to express reservations, apparently related to concerns that peers might convey misinformation or encourage inappropriate or harmful treatments. Coordinating with and educating physicians about peer support programs are priorities. Added resources, especially for staff coordination, would help with each of these challenges. Peer support in cancer needs to be recognized and funded as a routine part of care and survivorship support so that adequate resources become available.

Our observations highlight key issues faced by cancer peer support programs and complement peer-reviewed studies in describing and characterizing the field. Increasing recognition that peer support makes important contributions to cancer care and funding commensurate with that recognition are important objectives for the future.

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A042

6:30 PM-7:30 PM

PROMOTING INFORMED SCREENING DECISIONS AMONG MEN AT HIGH RISK FOR PROSTATE CANCER

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Recent years have seen differing recommendations on screening guidelines for prostate cancer (PCa) from national organizations such as the American Urological Association and the United States Preventive Services Task Force, reflecting the uncertainty of benefits and harms resulting from screening. Current guidelines encourage men to make individual screening decisions after consulting with their primary care provider to weigh the risks and benefits of undergoing Prostate Specific Antigen (PSA) testing. Many men at high risk of a PCa diagnosis (notably African American men) however, are more likely to be uninsured and lack a primary care provider. Mass community-based programs targeting underserved populations often provide the only opportunity for preventive screening services. The Saint Louis University Center for Cancer Prevention, Research and Outreach (CCPRO) redesigned its mass community-based screening program to ensure access to services to underserved men, while at the same time incorporating a session with a trained clinical educator in the community settings, designed to increase knowledge and promote informed decision making regarding PSA testing. To evaluate program efficacy, ninety men completed pre- and post-test surveys evaluating the outcomes of interest. The results showed that participants'; knowledge, beliefs, attitudes, anxiety levels, and self-confidence all improved from the pre-test to the post-test at a statistically significant level. Most notably participants'; awareness that PCa is often not life-threatening, and that watchful waiting is a reasonable treatment option increased after the encounter. More than half of the study sample felt they had received enough knowledge to make an informed decision about whether the PSA test was right for them. The findings of the evaluation show that the program had a positive effect on men';s ability to make informed decisions about PCa screening, and demonstrate that educational outreach programs with an emphasis on informed decision making can effectively balance screening guidelines with the needs of underserved populations in community settings to improve outcomes.

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A043

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REFUSAL IN RESPONSES TO SEXUAL ORIENTATION AND GENDER IDENTITY SURVEY ITEMS AMONG CANCER SURVIVORS

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There is growing evidence of sexual and gender minority (SGM) disparities in cancer risk, incidence and morbidity but data on sexual orientation and gender identity (SOGI) in the context of cancer prevention and control are limited. In particular, SOGI data are unavailable within the National Cancer Institute's Surveillance and Epidemiology End Results (SEER) program due, in part, to lack of SOGI data collection in hospital-based cancer registries and patient records - main sources of SEER data. Health systems have not historically asked SOGI questions, which are often assumed to be sensitive questions with higher non-response rates. SOGI items have recently been included in some national population-based health surveys, albeit inconsistently (e.g., inclusion of SO but not GI items or item administration limited to younger respondents). However, the extent to which cancer investigators collect SOGI data in smaller-scale research studies is unclear, especially in work focused on racial/ethnic groups when such items might be culturally unacceptable. The current study examined SOGI and other potentially sensitive question refusal rates in a sample of 357 breast, prostate, and colorectal cancer survivors recruited from the Metropolitan Detroit Cancer Surveillance System (MDCSS), part of the SEER program. Participants were recruited as part of an ongoing technology use study and all were directly asked potentially sensitive questions by trained interviewers via telephone. Mean age of participants was 62 years; 67% identified as female, 33% identified as male; 57% were African American (AfAm), 43% were white. Refusal rates were compared across sexual orientation (gay, straight, or other), gender identity (male, female, or transgender), household income, education level, and body weight. To adjust for sampling bias, responses were weighted on each respondent';s probability of selection and stratified by gender/race based on representation in the MDCSS. None of the respondents refused to answer items about sexual orientation, gender identity, or education. All participants who identified as gay were AfAm. Refusal rate for body weight was also relatively low (0.6% 95% CI: 0, 4.7; n=3). However, 8.4% (95% CI: 16.5, 45.3; n=28) refused to answer the income question. Findings suggest that concerns about SOGI items may be unwarranted even in older, racially diverse populations and that these items can be routinely included in health surveys, with great potential benefit for advancing the science of SGM cancer disparities and appropriate interventions.

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A044

6:30 PM-7:30 PM

THE RELATIONSHIP BETWEEN CANCER-RELATED DISTRESS AND BIOPSYCHOSOCIAL CONCERNS AMONG VETERANS IN OUTPATIENT ONCOLOGY

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Background: The Commission on Cancer recommends supportive oncology and survivorship care for all patients with cancer, which includes systemic screening for cancer-related distress. In accordance with this recommendation, a needs-based screening tool was implemented in a VA oncology clinic and the resulting data were examined. Understanding the interrelationships between multiple cancer-related concerns is important for effectively identifying needs.

Methods: Veterans (N=115) completed the “Patient Screening Questions for Supportive Care” by the Coleman Foundation. The following domains were assessed: psychological distress, practical, self-care, caregiver/family, spiritual, nutritional, physical activity, and treatment concerns, pain, and fatigue. One-way ANOVA were used to examine differences in concerns across level of distress (normal, mild, moderate, severe). Logistic regression was performed to ascertain the effects of cancer-related concerns on the likelihood that Veterans had positive depression or anxiety screens.

Results: Concerns did not vary based on race, type of cancer, or stage of cancer. 34.7% of participants presented with psychological distress based on the PHQ-4. Participants who endorsed mild (PHQ-4=3–5) or moderate (PHQ-4=6–8) distress were more likely to also endorse physical ($p<.001$), nutrition ($p=.001$), physical activity ($p<.001$), and treatment ($p=.002$) concerns, and to report worse fatigue ($p<.001$), than individuals who were not distressed. Logistic regression models revealed that increases in fatigue ($\text{Exp}(B)=2.8$, $p<.001$) and treatment concerns ($\text{Exp}(B)=2.2$, $p<.01$) increased the odds of a positive anxiety screen. Fatigue ($\text{Exp}(B)=3.2$, $p<.001$) and treatment concerns ($\text{Exp}(B)=1.5$, $p=.05$) increased the odds of a positive depression screen.

Conclusions: Veterans in an outpatient oncology clinic frequently endorsed psychological distress. It is evident that when Veterans experience even mild psychological distress, they also present with a wide range of biopsychosocial concerns. This finding highlights the importance of screening Veterans within oncology clinics for depression, anxiety, and other cancer-related concerns, and implementing appropriate follow-up procedures, to improve overall functioning.

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A045

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THE ROLE OF ETHNICITY IN THE EFFECT OF CANCER PATIENTS' EMOTIONAL COPING STRATEGIES ON PHYSICAL SYMPTOMS AND QUALITY OF LIFE

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Cancer diagnosis and treatments trigger intense emotions that compromise quality of life when not managed adequately. There are large individual differences in how cancer patients manage such emotions, and this may account for disparities in health recovery among cancer survivors. The present study investigated the effects of emotional coping strategies on patient-reported health outcomes (PROs) and the potential moderating role of ethnicity (Hispanic vs non-Hispanic) in the associations.

Patients who were newly diagnosed with colorectal cancer (Stage I to IV; 62% female; 62% Hispanic; age $\bar{x}=55.0$) participated in a longitudinal study: initial assessment approximately 3 months post-diagnosis (T1) and follow-up approximately 11 months post-diagnosis (T2; $n = 56$). Four types of emotional coping strategies (emotional expression, emotional processing, denial, and venting: CTEA and B-COPE) to manage cancer-related stress and self-reported ethnicity, all measured at T1, served as primary predictors. Outcomes of overall health-related quality of life (FACT-G) and physical symptoms (Emmons Physical Symptoms Scale) were measured at T1 and T2. Age, gender, education, and outcomes measured at T1 served as covariates.

General linear modeling revealed, after controlling for the effects of covariates, that the use of venting tended to be related to increased physical symptoms for all patients, $B=.197$ $p<.07$, and that this was more prominent among non-Hispanic patients $F(1, 41)=5.70$, $p<0.02$. On the other hand, the use of emotional processing tended to be related to better quality of life only among Hispanic patients $F(1, 41)=3.13$, $p<0.08$.

Results indicate that ethnicity is an important moderator of the efficacy of some of these specific emotional coping strategies. As advances in cancer treatment increase the duration of patient survival, therapies and techniques that improve patient quality of life are of paramount importance, and further research should therefore continue to take sociocultural moderators of therapeutic effectiveness into consideration.

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A046

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THE ROLE OF PSYCHOSOCIAL PROCESSES AND DEMOGRAPHIC CHARACTERISTICS IN UNDERSTANDING STIGMA AMONG LUNG CANCER PATIENTS

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Introduction: The experience of stigma is pervasive and harmful for lung cancer patients. Developing effective psychosocial interventions requires identifying those at greatest risk and targeting modifiable facilitators of stigma. Our previous work has identified three correlated, yet conceptually distinct, aspects of lung cancer stigma: Perceived Stigma (PS), Internalized Stigma (IS), and Constrained Disclosure (CD). The goals of the following analyses were to: 1) understand correlates of lung cancer stigma, and 2) identify factors that moderate relationships between PS, IS, and CD.

Method: Participants included 231 individuals diagnosed with lung cancer (64% women; mean age=63 years). Bivariate analyses examined associations between PS, IS, CD (measured by corresponding Lung Cancer Stigma Inventory [LCSI] subscales) and demographic/clinical variables (age, education, race/ethnicity, smoking status, disease stage), along with psychosocial processes (social constraints, patient activation). Moderation was tested by analyzing interactions in linear regression models.

Results: Smoking status (ever v. never smokers), race/ethnicity, patient activation, and social constraints were associated with the LCSI factor scores. Ever-smokers reported higher levels of IS compared with never-smokers ($p < .001$) and patient activation was inversely correlated with CD scores ($p < .05$), but neither moderated relationships between stigma components. Non-Hispanic White (NHW) patients reported higher levels of IS than racial/ethnic minority patients. Greater reporting of social constraints was associated with higher PS, IS, and CD. As noted by significant interactions, higher levels of social constraints were associated with stronger relationships between all three factors: PS and IS ($p < .01$), PS and CD ($p < .001$), IS and CD ($p < .01$).

Conclusions: Higher levels of social constraints were not only independently associated with IS, PS, and CD, but also strengthened relationships between these underlying elements of lung cancer stigma. The ability to mitigate social constraints and facilitate adaptive social relationships will be important components of effective stigma-reducing interventions for lung cancer patients. With the limited exceptions of smoking status and race/ethnicity, elements of stigma do not significantly differ based on demographic factors, suggesting that stigma is not limited to specific subpopulations of lung cancer patients.

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A047

6:30 PM-7:30 PM

USING HINTS TO EXPLORE CANCER BELIEFS AND HEALTHY BEHAVIORS ASSOCIATED WITH PAP TESTING IN ASYMPTOMATIC WOMEN

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Cervical cancer is a public health burden for aging women and secondary prevention through pap testing can help reduce this burden. However, cancer screening is a complex process and requires an asymptomatic individual to engage in a behavior that may result in a cancer diagnosis. In addition, women receive multiple and sometimes conflicting, recommendations from various healthcare organizations with regards to frequency and intervals on undergoing Pap tests. In this context, we wanted to describe socio-demographic

Towards this objective, we used the Health Information National Trends Survey (HINTS) which is a nationally representative survey and target adults aged 18 years or older in the civilian non-institutionalized population of the United States. This study was conducted on the HINTS 5 (Cycle 1) data.

Given the specific age groups recommended by the United States Preventive Services Task Force recommendations for screening, we focused our analyses regarding the adherence to Pap test on women between the ages of 21- 65 years of age. According to the recommendations, we considered women were adherent if they had their Pap test up to 3 years ago. We excluded all cases with a history of cancer. We conducted bivariate analysis to describe sociodemographic factors, cancer related health beliefs and other behaviors associated with adherence to cancer screening behaviors.

A total of 1079 women were included in the analysis for Pap test, of which 902 (83.6%) were adherent to the recommendations. Age, occupational status, educational status, marital status and having insurance ($p < .05$) was associated with women adherent to cervical cancer screening recommendations. There were no associations seen in women with the following beliefs: likelihood of getting cancer, everything causes cancer, preventing cancer is not possible, too many recommendations for cancer, cancer is more common than heart disease, cancer is fatal, and personal worry about getting cancer. However, women adherent to the Pap testing recommendations showed association ($p = .006$) with the statement "I'd rather not know my chance of getting cancer." In addition, there was association between physical activity ($p = .008$) but not with diet or tobacco use.

The study provides descriptive information about asymptomatic women who are adherent to the USPSTF recommendations including their socio-demographic characteristics, health beliefs, and their participation in other healthy behaviors such as physical activity and diet. These factors are important to understand in how they might be utilized in interventions directed at promoting women's adherence to screening recommendations. Interventions promoting screening behaviors and health communication campaigns designed to motivate asymptomatic women to undergo screening may need to target specific factors identified in the study.

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A049

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ASSOCIATIONS BETWEEN CAROTID INTIMAL MEDIAL THICKNESS AND NEUROCOGNITIVE PERFORMANCE IN A COMMUNITY SAMPLE OF OLDER ADULTS

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Atherosclerosis is a common pathologic process underlying cardiovascular disease (CVD). Subclinical atherosclerosis may be independently associated with cognitive decline among adults without clinically evident CVD. Carotid intima-media thickness (IMT), a marker of subclinical atherosclerosis, has emerged as a correlate of poorer performance on neuropsychological tests of cognitive function. Further underscoring this association are racial disparities in CVD morbidity and mortality that may translate to more pronounced carotid IMT and neurocognition relations among African Americans. To this end, the study examined the association between carotid IMT and neurocognitive performance in a diverse sample of older adults. In addition, the study examined race-stratified associations between carotid IMT and neurocognitive performance, adjusting for subclinical covariates. Data were analyzed from The Healthy Heart and Mind Study, a cross-sectional examination of relations of subclinical and traditional cardiovascular risk factors to brain volumes and cognitive performance among older adults. Fifty-three participants (38% male; 38% African American) with a mean age of 68.94y (SD=6.25) completed an eligibility screening, neuropsychological test battery, vascular testing, a blood draw, and structural MRI. Multiple regression analyses examining relations of carotid IMT to neurocognitive performance were adjusted for age, gender, education, supine mean arterial pressure and depression. Results showed that greater far wall carotid IMT was negatively associated with attention and response inhibition ($p=.055$). Results suggest subclinical atherosclerosis may impact specific neurocognitive domains via unique race-related pathways. Future studies should 1) further examine race-related differences in a larger, diverse sample; 2) examine related frontal brain volumes; and 3) examine psychosocial and demographic factors that may inform interventions to delay or prevent atherosclerosis and neurocognitive decline.

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A050

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BODY IMAGE AMONG YOUNG ADULT SURVIVORS OF CONGENITAL HEART DISEASE

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Objective: Congenital heart disease (ConHD) often requires surgical intervention to correct or palliate a cardiac lesion. Many ConHD survivors undergo multiple surgeries during their lifetime, leaving prominent scars on the chest and/or trunk. While it is known that body image concerns can negatively affect well-being, limited research has examined the association of scar-related body image concerns on patient-reported outcomes among ConHD survivors. The aim of this cross-sectional study was to 1) compare body image concern scores for ConHD survivors to other populations and 2) identify associations between body image concerns and patient-reported outcomes.

Methods: Participants were 128 young adult ConHD survivors (M age = 29.7 + 7.1 years, range = 18–42; 56% female; cardiac lesion severity = 12% simple, 52% moderate, 36% complex) recruited for a larger study. Participants completed the Body Image Disturbance Questionnaire (BIDQ) that was tailored for ConHD (e.g., Are you concerned about the appearance of your cardiac surgery scar[s]?), Hospital Anxiety and Depression Scale, and RAND 36-Item Health Survey 1.0. T-tests were performed comparing the average BIDQ scores for this sample to other patient populations and examining sex differences. Pearson correlations identified associations between body image concerns, emotional distress, and health-related quality of life (HRQoL).

Results: Means scores for the BIDQ were 1.3 + 0.5, with only 2 participants scoring above 3, a clinical cutoff for body image disturbance. Over 70% reported no preoccupation with their cardiac surgery scars. Mean scores on the BIDQ were significantly lower for this sample compared to college students (M = 1.8), teens with craniofacial conditions (M = 1.7), and teens with idiopathic scoliosis (M = 1.5). Females (M = 1.4) reported higher BIDQ scores than males (M = 1.2). Higher BIDQ scores were associated with more depressive ($r = 0.2$) and anxiety ($r = 0.4$) symptoms, poorer physical ($r = -0.2$), emotional ($r = 0.3$) and social ($r = -0.3$) functioning, as well as more pain ($r = -0.3$) and worse general HRQoL ($r = -0.2$).

Conclusions: Young adults with ConHD reported fewer body image concerns than the general population, as well as other populations who have visible signs of medical conditions. However, scores on the BIDQ were associated with risk for emotional distress and poor HRQoL. Those presenting with body image concerns should receive psychosocial resources to prevent worsening patient-reported outcomes.

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A051

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CHALLENGES AND BARRIERS TO CARING FOR A PERSON WITH HEART FAILURE

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This study examines the experience of caregivers of heart failure (HF) patients, a chronic condition that is often accompanied by other complex comorbidities and characterized by high rates of hospitalization. The aim of this study was to identify significant challenges for caregivers of HF patients and to identify potential areas for further intervention research. We conducted qualitative, semi-structured interviews conducted by phone. Interviews included questions about challenging components of caring for a HF patient. Interviews were digitally recorded and transcribed verbatim for analysis. Content analysis procedures were used to identify various themes and patterns contained in the text. Semi-structured interviews were conducted with 16 caregivers (14 female; median age = 63 years) of Southeastern Minnesota residents recently hospitalized with HF (5 female; median age 83.5 years). Findings reveal that caregiver challenges were rooted in interpersonal difficulties with the patient as well as the complexities of the patient's comorbidities. Caregivers described difficulty in dealing with the demands and expectations of the HF patient as well as shifts in the patient's personality and mood. Another challenge identified was managing other complex comorbidities of the HF patient including depression, cognitive decline, pre-existing illness, and acute injury. Caregivers identified significant challenges rooted in the caregiving demands and the comorbidities of the HF patient. These challenges contributed extensively to caregiver burden, frustration, and overload. Findings indicate the importance of addressing interpersonal issues with the caregiver and patient as well as practical aspects of caring for a patient with complex comorbidities. Caregivers of HF patients may benefit from enhanced support services to address difficulties with demanding patients and effectively manage complex care tasks for comorbidities. Further research is needed to understand how best to provide caregivers with effective social support and education.

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A052

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COMORBID OBESITY AND DEPRESSION AS CARDIOVASCULAR RISK AND ACCESS TO CARE AMONG RURAL WOMEN

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Title: Comorbid Obesity and Depression as Cardiovascular Risk and Access to Care Among Rural Women

Background: Rural women experience greater disparities in rates of cardiovascular heart disease (CVD) compared to their urban counterparts. Comorbid obesity and depression increase both short-term and long-term risk for hypertension, stroke, hypercholesterolemia, and myocardial infarction. In addition, poor access to care delays early detection and successful illness management, leading to poor health outcomes.

Objective: To examine the association between depression, obesity and access to health care among rural women.

Method: A retrospective cross-sectional analysis was conducted using data from the Rural Families Speak about Health (RFSH) Study, a national study of rural low-income women (N = 442) living in households with incomes at or below 185% of the federal poverty line. Multivariate logistic regression was used to examine the covariate adjusted associations between obesity, depression, their co-occurrence, and access to care obtaining adjusted odds ratios (AOR) and 95% confidence intervals.

Results: The majority of participants (77%, n = 307) were overweight or obese, 35% (n = 154) were depressed, and 28% (n = 124) had a co-occurrence of both depression and obesity. Approximately, 70% (n = 310) had access to care, which was determined by if one had a personal doctor who regularly cared for them. Those participants who were overweight were 47% (AOR = 0.53, $p = 0.034$) less likely to have access to care compared to those who had a normal weight or below. Those who were depressed were 34% (AOR = 0.66, $p = 0.39$) less likely to have access to care compared to those who were not depressed. Among those with co-occurrence of obesity and depression, they were 38% (AOR = 0.62, $p = 0.043$) less likely to have access to care compared to those who did not have a co-occurrence.

Discussion: Findings show that a large proportion of rural women have cardiovascular disease risk as defined by obesity and depression, both treatable disorders. Most notably, the rate of CVD among rural women may be decreased by broad reach preventative health efforts that address both depression and overweight/obesity simultaneously among these medically underserved women.

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A053

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SOURCES OF TENSION DURING THE EVALUATION AND THERAPY PROCESS AMONG PARENTS OF CHILDREN WITH DEVELOPMENTAL DELAYS

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Background: Developmental delays in children are common, but up to 90% of toddlers with developmental delays do not receive early intervention services. Early intervention is crucial to maximize functional outcomes. The process of learning about a child's developmental delay and obtaining services can be challenging and a significant emotional stressor on parents. Yet, few studies have examined parents'; experience with the identification of developmental delays in children.

Methods: Semi-structured in-depth interviews ($N=10$) were conducted via telephone with self-identified White parents of children identified with a developmental delay between 18–36 months old and who participated in the Illinois Early Intervention program. This program provides free assessment, evaluation, and therapy services for children under 3 years. We recruited parents from a network of early intervention families and clinical partners using flyers and social media posts. Two study team members conducted thematic analysis using interview transcripts to identify common themes in parents'; experience.

Results: Parents in this sample experienced tensions between voicing concerns about their child's development, and receiving dismissive responses from others. For example, although parents are told to be aware of developmental milestones, in our sample pediatricians often encouraged a "wait and see" approach, and family and friends suggested everything was fine. Parents often second-guessed their concerns and waited to obtain services for their child based on these responses. They encountered a secondary tension when their concerns were validated during the evaluation process and they learned the benefits of early intervention. This awareness increased parental guilt for not starting therapy as early as possible. Once a developmental delay was identified, parents reported adverse emotional responses including feelings of guilt and self-blame, sadness, frustration, and feeling overwhelmed and unsupported.

Conclusion: Parent's adverse emotional responses to learning about a child's developmental delay and obtaining early intervention services were complicated by tensions between their concerns and others'; minimizations or attempts at reassurance. These findings indicate social support parents receive during this process may increase parents'; emotional stress later on. Addressing the dismissal of parental concerns by others may help parents advocate for their child.

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A053

6:30 PM-7:30 PM

DO BELIEFS ABOUT THE CAUSES OF HIGH BLOOD PRESSURE PREDICT INTENTIONS TO CHANGE LIFESTYLE BEHAVIORS AMONG HINTS PARTICIPANTS?

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Background: About 75 million U.S. adults have hypertension (HTN). Lifestyle behaviors such as unhealthy diet and low levels of exercise increase a person's risk for developing HTN. However, uptake and adherence to lifestyle change interventions is low.

Objective: (1) Describe causal beliefs for developing HTN by sociodemographic factors and HTN status, and (2) evaluate associations between causal beliefs (genetic and lifestyle) and intentions to change behaviors.

Methods: Data from the 2014 Health Information National Trends Survey (HINTS) 4 Cycle 4 were evaluated ($N=3677$). Causal questions included: 1) "How much do you think health behaviors like diet, exercise, and smoking determine whether or not a person will develop high blood pressure/hypertension?"; and 2) "How much do you think genetics, that is characteristics passed from one generation to the next, determine whether or not a person will develop high blood pressure/hypertension?" Behavior change intention questions related to fruit, vegetable, and soda intake; weight management, and exercise. Chi-square tests assessed differences in observed proportions. Multivariate ordinal and nominal logistic regressions evaluated associations between causal beliefs and behavior change intentions among those with HTN.

Results: A total of 1602 out of 3677 respondents (~44%) reported having HTN. Those with HTN were more often older, Black, less educated, and obese. There was no difference between those with HTN and those without HTN in beliefs about the role that behaviors play in developing HTN ($P=0.1442$). However, those with HTN had significantly stronger beliefs in the role of genetics in developing HTN compared to people without HTN ($P<0.001$). In logistic regression models, there was a noticeable pattern: the less strongly people believed in the impact of behavior on developing HTN, the lower their odds for intentions to change behavior. For example, compared with those who believed that behavior had "a lot" of influence on developing HTN, those who said behavior had "some-what" of an impact had a 40% lower chance of intentions to increase fruit intake ($OR=0.60$; $CI: 0.40, 0.91$, $P=0.017$), 39% lower change of intentions to increase vegetable intake ($OR=0.61$; $CI: 0.41, 0.91$, $P=0.014$), and 51% lower chance of intentions to increase exercise ($OR=0.49$; $CI: 0.31, 0.78$, $P=0.002$). Beliefs about genetic causes of HTN were not associated with any intentions change behavior. Women had higher odds of intentions to change behaviors compared to men. Blacks and Hispanics were significantly more likely than Whites to report intentions to lose weight.

Conclusions: Beliefs about behavioral causes of HTN, but not genetic, are associated with intentions to change behaviors. Health messages that incorporate causal beliefs about HTN and sociodemographic factors may enhance behavior change attempts.

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A054

6:30 PM-7:30 PM

EXPLORING OLDER AFRICAN AMERICAN WOMEN'S PERSPECTIVES ON INFORMATION SHARING TO IMPROVE HEALTH IN YOUNGER GENERATIONS

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Purpose: The prevalence of hypertension is highest among African American women, who often occupy caregiving roles. The purpose of this study was to describe intergenerational caregiving and communication themes that emerged during focus groups on information sharing and self-management of hypertension.

Theoretical Framework: Self-management incorporates health-related behaviors into the daily lives of individuals and their families. The process includes social facilitation, meaning that family members influence, support, and collaborate with one another, in order to achieve specific outcomes, such as improved health status and quality of life.

Methods: Older African American women diagnosed with hypertension ($N = 13$, mean age = 73), participated in focus groups designed to explore their thoughts and perceptions about blood pressure information sharing. Data were audio recorded and transcribed verbatim. Transcripts were analyzed for codes, categories, and themes that emerged from these data.

Results: Thematic analysis revealed two overarching themes: Caregiving Responsibilities and Improving the Health of Younger Generations. The women expressed that they wanted to help younger generations to better manage their blood pressures: *...how do we...get young people to come and do [something]?* They felt compelled to share information with younger family members in order to prevent them from enduring the same suffering that they had experienced: *...I'd just like to know how to help; Maybe this generation here could help the next generation...*

Conclusion: This study suggests that intergenerational relationships may have an important role in managing health conditions, such as hypertension. Further examination of intergenerational relationships as targets for self-management intervention is warranted. Future studies are needed to explore these established relationships as a mode for intervention – 1) addressing the need for the women to share their wisdom and 2) helping to improve blood pressure management among African Americans across the lifespan.

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A055

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NAIVE MODELS OF BLOOD PRESSURE FLUCTUATION AND THE RELATIONSHIP TO MEDICATION ADHERENCE

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Home blood pressure (BP) monitoring offers more precise BP estimates and has a small impact on lowered BP values, thus is it commonly recommended to patients as part of standard care. Regular BP monitoring may lead to habit formation around hypertension management, however it may also provide biometric feedback to patients that is misinterpreted or misunderstood. We present results from three online studies that describe the “naïve models” individuals hold around BP fluctuation over time, and how these naïve models are associated with BP medication adherence.

In Study 1 we found that participants are overly optimistic about how quickly their BP will change in response to medication. Despite having greater experience with BP, hypertensive participants reported even faster expectations ($M = 9.29$ days), compared to non-hypertensive participants ($M = 15.57$). We replicated this pattern in Study 2, where we also found that participants who expected a faster decrease in BP after starting a hypertensive medication reported significantly lower adherence intentions in a hypothetical scenario.

We tested the causal relationship between BP value fluctuation and adherence intentions in Study 3 and found that hypertensive participants with lower chronic adherence levels were more sensitive to hypothetical fluctuations in BP compared to more adherent participants. When less adherent hypertensive participants were randomly assigned to a condition that was shown BP values that were higher than they would have expected, they reported significantly stronger adherence intentions. When these participants were randomly assigned to a condition that was shown BP values that were lower than expected, they reported significantly weaker adherence intentions. Participants with higher chronic adherence levels did not alter their adherence intentions in response to the BP values.

Taken together, our research shows that patients are likely to have unrealistic expectations for how BP should fluctuate over time, and that deviations from these expectations are associated with nonadherence for some patients. Home BP monitoring may be valuable for habit formation and disease management, however further researchers and clinicians should identify the best method of presenting BP values to patients so as to minimize the potential impact of naïve models on medication adherence.

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A056

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RESPIRATION AND APPLIED TENSION STRATEGIES TO REDUCE VASOVAGAL REACTIONS TO BLOOD DONATION: A RANDOMIZED CONTROLLED TRIAL

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Vasovagal reactions (VVR) leading to syncope and milder symptoms such as weakness and dizziness are common in medical settings, especially those involving needles and blood. They are typically stress-related, e.g., more common in those fearful of medical procedures, and can adversely impact health and health-care behaviour. Two behavioural strategies to reduce VVR were examined in 547 volunteers at university blood clinics (51% female; $X = 21.2 \pm 2.5$ years; $X = 1.9 \pm 2.3$ previous donations). They were assigned randomly to groups that 1) learned an Applied Tension (AT) muscle-tensing technique in a brief 5-minute pre-donation training session, 2) learned a slow and shallow breathing anti-hyperventilation technique (RESP) before donation, 3) learned a procedure combining AT and RESP, or 4) followed the normal procedure with no pre-donation training. Dependent measures included the self-report Blood Donation Reactions Inventory (BDRI), whether or not the donor required treatment for a VVR or fainted, blood pressure, heart rate, and respiration rate. The primary analyses were 2 AT (yes/no) x 2 RESP (yes/no) x Medical Fear Survey Score (treated as a continuous variable) general linear models (GLM) or logistic regression equations. All treated groups benefited somewhat compared to no treatment as indicated by an AT x RESP interaction effect in the GLM of systolic blood pressure, $F(1,498) = 4.46, p = .035$, reflecting significantly smaller pre- to post-donation decreases in all treated groups. However, RESP produced more clinical benefits. In the logistic regression predicting whether or not the donor was observed to faint by a research assistant, there was a modest but significant main effect of RESP, $OR = 3.2, 95\% CI = 1.1-9.9, p = .039, 3.5$ vs. 5.5% , respectively. The effect of RESP was qualified by an interaction with Medical Fear in the analysis of whether or not the participant was treated for vasovagal symptoms, $OR = 0.46, 95\% CI = 0.28-0.76, p = .003$. Respiration control did not reduce the odds of needing intervention among the more fearful participants but significantly reduced need for intervention among those with less pronounced fear, $X^2(1) = 6.41, p = .011$. A similar interaction was observed in the GLM of BDRI scores, $F(1,530) = 7.99, p = .005$. The results provide further evidence that medically-related VVR can be reduced by simple behavioural procedures though further refinements are needed to help those most susceptible to such reactions.

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A057

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TELEVISION VIEWING MODERATES THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND BODY FAT IN FEMALES BUT NOT MALES

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Sedentary behavior has emerged as a determinant of poor cardiometabolic health outcomes, even after adjustment for physical activity levels. Less clear is the extent to which sedentary behavior interacts with physical activity to impact cardiometabolic outcomes, such as body fat percentage (BF%). This study addressed this gap by testing the hypothesis that increased sedentary behavior in the form of television viewing would be associated with a higher BF% among physically inactive versus active adults. The study sample were 568 adults who were part of the Kansas City Built Environment and Health Study. Trained interviewers collected study data at participants' homes. BF% was objectively assessed with Tanita foot-to-foot bioelectrical impedance analyzer (Model TBF-305; Tanita). Sedentary behavior (hours spent watching television per week) and physical activity (International Physical Activity Questionnaire - IPAQ) were self-reported. Socio-demographic variables (age, sex, marital status, race, educational attainment, employment status), depression symptoms, perceived stress, restless sleep, fruit and vegetable intake, and perceived neighborhood support for physical activity were assessed as covariates. Linear regression models of BF% were generated and stratified by physical activity level (defined as inactive vs. active according to IPAQ criteria) to test for interaction effects. The sample was 69.9% female with a mean age of 45 years ($SD=14.6$). Majority of participants were Non-Hispanic White (66.5%), married (52.9%), had some college education or more (74.0%), and were employed (60.2%). Nearly 63.0% of the sample were categorized as inactive. For males and females, the average BF% was 26.3% ($SD=9.7$) and 36.0% ($SD=10.3$), respectively. In terms of sedentary behavior, women watched an average of 19.1 ($SD= 16.3$) hours of television each week while males watched an average of 23.6 ($SD=17.8$) hours. Bivariate analysis showed that television viewing was associated with BF% in females but not males, thus regression models were generated for females only. Results showed that among \geq minimally active women, weekly hours of television viewing were not significantly associated with BF% ($B=.038, p=.73$), and that the addition of the television viewing variable to the model did not improve the R^2 . In contrast, among inactive women, weekly hours of television were associated with BF% ($B=.139, p=.04$) and the addition of this variable increased the model predictive capacity by 1.4%. These data indicate that inactive women may be more vulnerable to the negative health effects of increased sedentary time from watching television than \geq minimally active women. The effects of interventions to reduce sedentary time on body composition in inactive women warrants investigation.

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A058

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THE IMPACT OF DEPRESSION ON TREATMENT ADHERENCE AND CARDIORESPIRATORY FITNESS IN CARDIAC REHABILITATION

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Major depression and coronary heart disease are two strongly linked, major causes of death and disability. After an acute coronary event, many patients are referred to cardiac rehabilitation (CR), a medically supervised exercise intervention and lifestyle training program. Depression may partially account for poor CR adherence and resulting cardiovascular problems in patients with a history of heart disease; however, underlying mechanisms through which depression impacts cardiac functioning are not yet well understood. The current project tests a theoretical model in which CR adherence (i.e., number of CR sessions attended) mediates the relation between baseline depression and cardiorespiratory fitness after CR. A community sample of 858 older adults initiating CR after hospitalization for a coronary event completed a symptom-limited exercise stress test before and after the 12-week exercise program. Cardiorespiratory fitness was measured via VO₂max, peak MET, and total duration of the stress test. Depression was measured at baseline using the Patient Health Questionnaire Depression Scale. CR adherence did not mediate the relation between baseline depression scores and fitness outcomes in the full sample. However, higher levels of depression predicted poorer CR adherence in a subsample of 74 patients with moderate to severe depression. These findings lend support to depression as a predictor of treatment nonadherence in CR. Screening for depression in the context of coronary heart disease and implementing evidence-based depression interventions in secondary prevention settings can help alleviate a massive public health burden.

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A059

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THE MODERATING ROLE OF PERCEIVED BARRIERS IN PREDICTING THE IMPACT OF INTENTION ON CARDIAC REHABILITATION PARTICIPATION

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Purpose: Participation in cardiac rehabilitation (CR) improves cardiovascular risk factors and reduces morbidity and mortality following acute coronary syndrome. Eligible patients who receive a referral to CR typically report strong intention to attend, yet CR participation rates remain low. The CR Barriers Scale (CRBS) is a self-report questionnaire that assesses well-documented obstacles to CR participation, including healthcare factors, logistical constraints, work/time conflicts, and physical comorbidities. Total CRBS scores are negatively associated with CR participation, but the extent to which specific CR barriers prevent translation of intention into actual CR participation has not been evaluated. This study investigated whether specific CR barriers, characterized by CRBS subscales, moderate the association between intention to attend CR and actual CR participation (i.e., enrollment and attendance).

Methods: One-hundred patients with acute coronary syndrome who were referred to, but not yet enrolled in, a 12-week outpatient CR program in Calgary, Canada, completed the CRBS and a validated two-item measure of intention to attend CR. Actual CR enrollment and attendance were subsequently determined by chart review. Each CRBS subscale was examined as a potential moderator of the association between intention to attend CR and CR participation in two sets (one for CR enrollment, one for CR attendance) of four moderation analyses (one for each CRBS subscale).

Results: On average, patients reported high intention to attend CR ($M=6.08/7.0$, $SD=1.80$) and low CR barriers in terms of healthcare factors ($M=1.53/5.00$, $SD=0.53$), logistical issues ($M=1.86/5.00$, $SD=0.94$), work/time conflicts ($M=2.15/5.00$, $SD=0.98$), and comorbidities ($M=1.68/5.00$, $SD=0.71$). Yet, 17% did not enroll in CR, and the average patient missed 36% of CR sessions. Weaker intention to attend CR corresponded to lower CR enrollment ($b=0.46$, $p=.004$) and poorer attendance ($b=2.26$, $p<.001$). Higher healthcare barriers predicted lower CR enrollment (OR=0.03, 95% CI <.01, 0.17) and poorer attendance ($b=-9.59$, $p<.001$). Work/time barriers were inversely associated with attendance ($b=-2.53$, $p=.008$). Logistical barriers moderated the association between intention and CR enrollment ($b=-0.32$, $p=.027$) and attendance ($b=-1.30$, $p=.005$). Specifically, among patients who reported high logistical barriers ($>M+1.4SD$), stronger intention to attend CR did not significantly predict CR participation.

Conclusion: Perceived logistical barriers influence whether patients successfully translate their “good intention” to attend CR into actual program participation. Interventions to address issues such as financial and transportation constraints among prospective CR patients may be beneficial.

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A060

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THE ROLE OF AGE AND BODY MASS INDEX IN PSYCHOLOGICAL DISTRESS FOLLOWING AN ACUTE CORONARY SYNDROME

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Background: Psychological distress following an acute coronary syndrome (ACS) is common and associated with adverse medical outcomes. Age and body mass index (BMI) may be linked to the presence of—and recovery from—post-ACS distress, but such links are not well-studied. Accordingly, we examined how age and BMI may be associated with distress shortly after ACS, and how they were prospectively related to improvement in psychological symptoms.

Method: The two datasets used for this analysis included participants (Study 1: $N = 126$, M age = 63 years, 59% female; Study 2: $N = 164$, M age = 61 years, 17% female) who experienced an ACS in the prior 3 weeks. Study 1 compared several versions of a positive psychology intervention that lasted up to 16 weeks, and assessed symptoms at 0, 8, and 16 weeks. Study 2 was observational and included symptom measures at 0, 12, and 24 weeks. Symptoms were measured with the Perceived Stress Scale, Hospital Anxiety and Depression Scale, and Patient Health Questionnaire-9. Multivariable regressions were run for each outcome, controlling for race, sex, marital status, prior ACS, and illness severity.

Results: In Study 1, BMI was positively associated with perceived stress, anxiety, and depression at baseline, but these relationships were no longer significant once controlling for age. Age was negatively related to stress and anxiety (p 's < 0.05), but not depression. Controlling for other sociodemographic and health factors, the negative association between age and baseline anxiety persisted ($p < 0.01$). BMI was unrelated to symptom change at 8 or 16 weeks, and younger age predicted a smaller reduction of perceived stress at 8 weeks ($p = 0.01$) but not 16 weeks. In Study 2, BMI was unrelated to distress at baseline, while age was negatively associated with stress, depression, and anxiety (p 's < 0.05). Controlling for other health/demographic factors, age, but not BMI, was still negatively associated with the three psychological variables (p 's < 0.01). BMI was unrelated to change in any psychological variable. Younger age was associated with a smaller decrease in depression and anxiety at 12 and 24 weeks (p 's < 0.05).

Conclusions: Overall, younger patients had greater post-ACS stress, depression, and anxiety. Relationships between BMI and distress appeared to be explained by those with higher BMI being younger. Further, particularly when not receiving a behavioral intervention, younger patients were less likely to have improvement in anxiety and depression over time. Younger, mid-life ACS patients may be vulnerable to psychological distress and could benefit from interventions designed to meet their unique needs.

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A060a

6:30 PM-7:30 PM

LONG-TERM WEIGHT LOSS AND METABOLIC SYNDROME IN U.S. ADULTS

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For chronic disease prevention, studies suggest that overweight adults reach a 5–10% weight loss maintenance target for optimal health. However, it is not sufficiently clear whether higher levels of long-term weight loss (LTWL) incrementally lead to lower levels of cardiovascular disease risk. Therefore, in the current study we examine the association between various thresholds of LTWL and metabolic syndrome (MetS) among adults who at one point were overweight or obese. Data on 10,842 adults from a U.S. sample with pertinent variables were included in the analysis. LTWL thresholds were 5–9.9%, 10–14.9%, 15–19.9%, and $\geq 20\%$ and MetS (yes/no) was defined based on the AHA/NHLBI criteria. Multivariable logistic regressions models were estimated using a partially adjusted model including socio-demographics and a fully adjusted consisting of variables in the first models plus health variables (e.g., smoking status, health status). Results from the partially adjusted model indicated that all weight loss thresholds were associated with a lower likelihood of MetS, with the lowest odds in the 15–19.9% and $\geq 20\%$ categories, in comparison to the reference group of less than 5% weight loss (OR=0.62, 95%CI 0.44–0.87; OR=0.54, 95%CI 0.42–0.69; respectively). However, a clear incremental pattern was not apparent, with 26% reduced odds for MetS in the 5–9.9% category and only 20% lower odds in the 10–14.9% group. In the fully adjusted model only the $\geq 20\%$ category was significantly related to lower odds of MetS (OR=0.69, 95%CI 0.52–0.91). In conclusion, findings suggest that higher levels of LTWL might be necessary to significantly reduce the odds of MetS.

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A061

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ACCESS IS NECESSARY BUT NOT SUFFICIENT: FACTORS INFLUENCING DELAY AND AVOIDANCE OF HEALTH SERVICES

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Background: Despite recently expanded access to health insurance, consumers still face barriers to using their coverage to obtain needed healthcare.

Objective: To examine the characteristics of those who delay or avoid healthcare due to costs.

Methods: Participants were recruited via Amazon mTurk and completed a survey assessing demographic characteristics, financial toxicity, healthcare minimizer-maximizer tendencies, health insurance knowledge, numeracy, delaying/avoiding any care, and delaying/avoiding 6 common healthcare services (3 preventive and 3 non-preventive services). Validated measures were used when available. Delay/avoidance behaviors were categorized into delaying/avoiding any care, preventive care, and non-preventive care. Separate logistic regression models examined 1) financial toxicity, 2) minimizer-maximizer tendencies, 3) numeracy, 4) health insurance knowledge, and 5) knowledge of preventive care coverage as they relate to delay/avoidance behaviors, controlling for chronic conditions, insurance status, and/or income where appropriate.

Results: Of 518 respondents, 470 did not fail attention-check questions and were used in analyses. 45% of respondents reported delaying/avoiding care due to cost. Multivariable analyses found that financial toxicity was related to delaying/avoiding any (OR=0.888, $p < 0.001$), preventive (OR=0.905, $p < 0.001$), and non-preventive (OR=0.903, $p < 0.001$) care. A tendency to minimize seeking healthcare (OR=0.734, $p < 0.001$) and subjective numeracy (OR=0.794, $p = 0.023$) were related to delaying/avoiding any care. General health insurance knowledge (OR=0.990, $p = 0.030$) and knowledge of preventive care coverage (OR=0.422, $p < 0.001$) were related to delaying/avoiding preventive care.

Conclusions: Many people delay or avoid healthcare due to costs, even when insured. Results suggest that there may be different reasons individuals delay or avoid preventive and non-preventive care. Findings may inform interventions to educate consumers and support discussions about healthcare costs to facilitate appropriate healthcare utilization.

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A062

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ADAPTIVE DECISION-MAKING IN RESPONSE TO NARRATIVES OF HURRICANE-ASSOCIATED LOSS AND INCOME LOSS IN DRINKERS

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Both resource scarcity and the simulation thereof can direct attention towards immediate needs, leading to more myopic decisions. This resource scarcity may be evoked in multiple ways, including conventional settings of economic loss (i.e., layoffs) and in natural settings (i.e., natural disasters). Previous research has demonstrated that income loss increases both preference for immediate rewards (e.g., delay discounting) and craving for substances of abuse. We hypothesized that narratives of hurricane-associated loss may evoke similar effects.

To test these hypotheses, data were analyzed from $n=392$ regular binge drinkers from Amazon Mechanical Turk (mTurk). Participants completed demographics including the Alcohol Use Disorders Identification Test (AUDIT) and were randomly assigned to a narrative describing either an ongoing hurricane disaster ($n=95$), a minor storm ($n=100$), job loss ($n=99$), or economically neutral job transfer ($n=98$). Participants then completed a task of delay discounting of \$1000, and a measure of craving (the Alcohol Craving Questionnaire-Short Form, or ACQ-SF), and other scales. Demographics and AUDIT did not differ between groups.

Data were analyzed in a linear model, with “content” (negative or control) or “setting” (natural or employment-related) as fixed effects. As hypothesized, participants who engaged with negative narratives describing loss ($F=66.6$, $p < 0.001$), and a natural disaster narrative setting ($F=5.24$, $p = 0.02$) demonstrated higher main effect discount rates. Post-hoc analyses revealed that these differences were preserved in planned comparisons between narratives of hurricanes compared to minor storms ($F=25.6$, $p < 0.001$) and narratives of job loss compared to job transfer ($F=46.0$, $p < 0.001$). Furthermore, after controlling for the correlated variable of AUDIT score as a random effect, we observed a significant main effect of narrative content (Chi square = 6.85, $p = 0.008$) on craving for alcohol. However, this effect was only seen in narratives in the employment-related setting (Chi square = 6.11, $p = 0.013$), and not within the natural setting (Chi square = 1.13, $p=0.29$).

These results suggest that both hurricane-associated loss and employment-related loss increases preference for immediate rewards. However, only employment-related loss increased craving for alcohol, which may represent a lack of desire to consume alcohol in an ongoing hurricane scenario despite increased desire for immediate reward receipt.

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A063

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AMBIVALENCE ATTENUATES THE RELATIONSHIP BETWEEN ATTITUDES AND INTENTION TO DONATE BLOOD

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BACKGROUND: Within the Theory of Planned Behavior (TPB), an established model of blood donation intention, the relationship between donation attitudes and intention is consistently among the strongest in the model. Yet, ambivalence has been shown to attenuate the relationship between attitudes and intention in health-related behaviors, and donation-related ambivalence, and – in particular – its relationship to the TPB, has received little empirical attention. Thus, the present study sought to determine if individual differences in ambivalence moderate the relationship between attitudes and donation intention.

METHODS: A sample of blood donors and non-donors ($N = 241$) participated in an online survey of donation attitudes, donation-related self-efficacy, and donation intention. Participants also completed the Blood Donation Ambivalence Survey (BDAS), which includes subscales of commitment and indecision. Scores on the BDAS range from 1 to 7, with lower commitment scores and higher indecision scores reflecting greater ambivalence. Regression analyses were performed to detect moderation effects, and the Johnson-Neyman procedure was used to identify regions of significance for significant interactions.

RESULTS: A significant interaction was observed between commitment and attitudes on the prediction of intention ($\beta = .21$, $p < .01$). Participants with commitment scores of 2.7 and below evidenced non-significant relationships between commitment and attitudes, whereas commitment and attitudes were significantly related when commitment scores were greater than 2.7. Likewise, a significant interaction was observed between indecision and attitudes ($\beta = -.20$, $p < .01$). Participants with an indecision score of 4.7 or greater demonstrated non-significant attitudes - intention relationships, and indecision scores below 4.7 were associated with significant relationships between attitudes and intention. Similar results were obtained when self-efficacy was entered into the models as a covariate.

CONCLUSIONS: Ambivalence attenuates the relationship between attitudes and intention. The inclusion of ambivalence in TPB models may refine our understanding of donation intention and inform interventions aimed at increasing donation behavior. Future research should explore the relationship between ambivalence, attitudes, and donation behavior.

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A064

6:30 PM-7:30 PM

COGNITIVE AND AFFECTIVE DECISION-MAKING FACTORS MEDIATE THE RELATION BETWEEN SES AND PREVENTIVE HEALTH BEHAVIORS

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BACKGROUND: Disparities in preventive health behaviors by socioeconomic status (SES) are common. For example, individuals with lower SES tend to engage in less physical activity and eat fewer fruits and vegetables. There is a known relation between both cognitive (e.g. perceived barriers) and affective (e.g. associated feelings of pleasure, disgust) decision-making constructs and engagement in each of these behaviors. Given this, a plausible hypothesis is that SES may influence these decision-making constructs and that the SES-decision making relation may help to account for observed SES-behavior disparities.

METHOD: 446 community adults completed a telephone survey assessing positive and negative affective associations as well as perceived benefits and barriers for each of two behaviors – vigorous physical activity and fruit/vegetable consumption. They also reported level of education. Bootstrap modelling was used to estimate the indirect effects of decision-making constructs as a mediator of the relation between education and behavior.

RESULTS: Education was associated with both behaviors; higher education was associated with both more vigorous physical activity and more fruit/vegetable consumption ($B_s > 0.11$, $ps \pm 0.13$, $ps < .05$; the only exception was physical activity barriers). Tests of the mediational model showed that the relation of SES to each behavior was mediated by the decision-making constructs. For fruit/vegetable consumption, the total indirect (mediated) effect was 0.65 (95% CI=0.27, 1.16), accounting for 41% of the relation of SES and behavior. For physical activity, the total indirect (mediated) effect was 0.69 (95% CI=0.03, 0.13), accounting for 38% of the SES-behavior relation.

DISCUSSION: These findings suggest that decision-making constructs explain some of the SES disparities in both fruit/vegetable consumption and physical activity. There are several plausible mechanisms for this, including differences in knowledge about behaviors, structural differences in ability to engage in behaviors, and differences in perception of future outcomes of present actions. Interventions to address these decision-making mechanisms might be fruitful approaches to address SES-preventive behavior disparities.

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A065

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COUPLES' INTENTIONS TO SHARE EXOME SEQUENCING RESULTS WITH FAMILY

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Background: Some variants detected by genome sequencing have no effect on personal disease risk but can increase risk of disease for biological relatives (i.e., carrier results). Given familial implications of genetic information, it is important to understand factors that influence intentions to share carrier results with family members. Dyadic analyses account for variance in interpersonal phenomena between two individuals (i.e., within a dyad), with evidence and theory suggesting that decision making is often conducted within couples. To our knowledge, no studies have examined the dyadic associations of spousal perceptions and beliefs when both spouses are undergoing exome sequencing.

Methods: Survey responses from 136 individuals (68 couples) undergoing sequencing in a research study offering return of select individual variants were analyzed using dyadic analyses (intraclass correlation coefficient and actor-partner interdependence modeling). Variables hypothesized to be associated with individuals' intentions to share carrier results with other family members (perceived value, worry, and attitudes) were examined concurrently.

Results: Intentions to share carrier results with family members was correlated between spouses ($ICC=0.43$; 95%CI: 0.21–0.61; $p=0.004$), as was worry about risk of a genetic condition in the family ($ICC=0.45$; 95%CI: 0.24–0.62; $p<0.001$). Perceived value of result and worry about risk of a genetic condition in the family were associated with one's own intentions to share carrier results. However, spousal variables (i.e., partner effects) did not explain additional variance in an individual's intentions.

Conclusions: Although we found no partner effects on intentions, spouses converged in their intentions to share carrier results, suggesting it may be important to account for non-independence in other research studies that use exome sequencing.

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A066

6:30 PM-7:30 PM

MODIFIABLE FACTORS OF FAMILY CAREGIVERS' CONFIDENCE IN MAKING FUTURE MEDICAL DECISIONS FOR PERSONS WITH CANCER

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Background: Family caregivers often lack confidence in having to potentially make future medical decisions for their care recipients with cancer should they become too ill to make decisions for themselves.

Purpose: Determine a parsimonious set of modifiable factors associated with family caregivers'; confidence in making future medical decisions for their care recipients with cancer.

Methods: Cross-sectional mail survey conducted in communities of 8 cancer centers in Tennessee, Alabama, and Florida. Family caregivers of Medicare beneficiaries with pancreatic, lung, brain, ovarian, head and neck, hematologic, and stage IV cancers completed validated measures of their social and mental health, self-care behaviors, coping styles, and confidence in making future medical decisions for patients. Using linear modeling, the Bayesian information criterion was used to identify a small set of caregiver factors associated with decision-making confidence. Bootstrap methods and a random forest approach were used to assess generalizability of results.

Results: Caregivers(n=294) were on average age 65.5 years and mostly female (72.8%), white (91.2%), and care recipients'; spouse/partner (60.2%). Patients averaged 75.3 years and were mostly male (54.4%). The resulting parsimonious set of factors associated with caregiver decision-making confidence included: spiritual growth self-care behaviors, avoidant coping, emotional social support, and care recipient age (in-sample $R^2=.22$). These factors were also identified by the random forest approach as important in predicting decision-making confidence. After overfitting adjustment (shrunken $R^2=.09$), the strongest associations were: spiritual growth self-care behaviors (adjusted standardized $B=.17$, $p=.005$) and avoidant coping (adjusted standardized $B=-.12$, $p=.045$).

Conclusions: Encouraging caregivers'; spiritual growth and enhancing their coping skills to lessen avoidance of stressful situations may be promising targets for interventions to improve family caregivers'; confidence in future medical decision-making.

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A067

6:30 PM-7:30 PM

NARRATIVE THEORY: HURRICANE-ASSOCIATED LOSS INCREASES DELAY DISCOUNTING, DEMAND, AND CONSUMPTION OF SNACKS IN THE OBESE

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Narrative theory describes that vividly imagining oneself in a hypothetical, yet realistic, scenario can acutely alter decision-making. In particular, delay discounting, a measure of self control, has been shown to increase or decrease following consideration of a scarcity scenario (e.g., negative income shock) or positive imagination of the future (e.g., episodic future thinking), respectively. Excessive delay discounting, suggested as a behavioral marker for substance use disorder, is also becoming increasingly recognized as related to other negative health behaviors, including obesity. Therefore, understanding how obese individuals make decisions in different contexts is important to understand. The present study measured changes in delay discounting, valuation, and consumption of highly palatable snack foods following either a negative or neutral scenario in obese individuals. Participants ($n=41$) with a BMI >30 and no plans to change their eating patterns, were invited to enroll into the 2-session study. At the first session, participants rated their liking of 7 different calorie-dense snack items commonly found in a vending machine. Participants were asked to complete several discounting tasks and a purchase task for their top-rated snack. At the second session participants, were asked to read and consider how they would feel in their randomly assigned hypothetical scenario (i.e., a devastating hurricane [negative] or mild storm [neutral]). Then, participants completed the same tasks as presented at the first session, and were given ad-libitum access to their top 3 ranked snack foods. Results indicated the delay discounting and demand for participants'; top-rated snack food increased significantly in the hurricane group, compared to the mild storm group ($p>0.05$). Moreover, those in the hurricane group consumed significantly more calories when given free-access to their favorite snack foods, even when hunger was standardized with a preload meal bar ($p>0.05$). Consistent with the new theory of reinforcement pathology, these results suggest that vivid consideration of a negative scenario, such as a devastating hurricane, will constrict the temporal window and increase valuation of hedonic snack foods among obese individuals.

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A068

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POSITIVE AFFECT BUT NOT NEGATIVE AFFECT ASSOCIATED WITH BREASTFEEDING INTENTIONS IN AFRICAN AMERICAN MOTHERS

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BACKGROUND: Breastfeeding in the U.S. is socially patterned—African American mothers have the lowest rates of breastfeeding initiation (60%) compared to all other racial/ethnic groups (CDC, 2007). Due to the health benefits of breastfeeding, it is important to understand and reduce these disparities. Numerous studies have examined the psychosocial components of breastfeeding decision-making in African American mothers (e.g., convenience, pain/discomfort, social/cultural acceptance, employment, and lack of knowledge, time, or access to information or support services) (See Jones, Power, Queenan, & Schulkin (2015) for a review). Few studies have examined positive and negative affect relating to breastfeeding as a predictor of breastfeeding intentions.

METHODS: The associations between perceived benefits/barriers to breastfeeding, positive/negative affect, and intentions to breastfeed were examined in 88 pregnant African American women enrolled in WIC. The association between individual positive emotions (happy, delighted, satisfied, relaxed) and negative emotions (disgusted, angry, annoyed, sad, embarrassed) in relation to breastfeeding intentions were examined. Mediation analyses were used to assess possible indirect effects of composite measures of positive/negative affect on the relationship between benefits/barriers and breastfeeding intentions.

RESULTS: Individual positive emotions, happy ($r=.32$), delighted ($r=.36$), and relaxed ($r=.33$) were associated with increased intentions to breastfeed ($p<.01$ for all). Negative emotions, except sadness ($r=.14$, $p<.05$), were not associated. The relationship between perceived benefits to breastfeeding and breastfeeding intentions was partially mediated by positive affect (indirect effect (1.22)(.66)=.81, 95% bias-corrected CI based on 10,000 bootstrap samples -.04,1.9). Positive affect did not mediate the relationship between perceived barriers and intentions, and negative affect did not mediate the relationship between benefits or barriers and intentions.

DISCUSSION: This relationship between affect and breastfeeding intentions seems to be through the behavioral affective associations pathway (Kiviniemi, Voss-Humke, & Seifert, 2007); positive affect but not negative affect was related to breastfeeding intentions and positive affect partially mediated the relationship between benefits and intentions. Interventions to encourage breastfeeding should address the impact of affect, especially positive affect.

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A069

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PREFERENCE FOR SHARED DECISION MAKING AMONG PATIENTS AT INCREASED RISK OF HOSPITALIZATION

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Background: Shared decision making (SDM) is increasingly recognized as vital to patient care. However, patient preferences for SDM vary by individual characteristics and social and environmental context. This study evaluated factors associated with preferences for SDM among adults at increased risk of hospitalization. Engaging high-utilizing patients in SDM may lead to less invasive interventions and improve satisfaction.

Methods: Study participants were 2,000 adults (mean age=63 ± 16y; 86% Black; 63% female) hospitalized in the year prior to enrollment in a RCT comparing a hospital-based intervention to standard care. Interviews were completed every three months and included two measures of SDM: "I prefer that my doctor offers me choices and asks my opinion" and "I prefer to leave decisions about my medical care up to my doctor." Analyses included 1974 respondents. Baseline data were analyzed using chi-square, t-test, and logistic regression analyses. Follow up data were analyzed using logistic regression, based on the subset of participants (68%) alive one year after enrollment and who reported on hospitalization at each of the follow-ups (responses from which were aggregated into one variable of "future hospitalization").

Results: At enrollment, 98% of participants wanted their doctor to offer choices, but 55% preferred to leave medical decisions up to their doctor. Individuals who preferred to leave medical decisions up to their doctor were more likely to be male (Odds Ratio (OR) 1.35; 95% CI=1.12–1.62), Black (vs non-Black; OR 1.37; 95% CI=1.0–1.9), have lower income ($p=.001$; $d=0.20$), complete less education ($p<.001$; $d=0.25$), and report less impairment in activities of daily living (ADL; $p=.002$; $d=0.12$) or instrumental ADL ($p=.001$; $d=0.15$) than their counterparts. Groups did not differ according to age, ethnicity, overall health, number of hospitalizations in the past year, mental health, depressive or anxiety symptoms, psychosomatic complaints, disordered personality traits, or indices of health literacy ($ps>.06$). SDM preference did not predict future hospitalization, controlling for study group or whether they were hospitalized in the prior year (OR 0.87; 95% CI=0.71–1.11), and did not differ between study group at each follow up assessment ($ps>.71$).

Conclusions: Patients, regardless of health status, need more empowerment to engage in SDM. Individuals with lower income, less education, and who identify as male or Black may need enhanced support.

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A070

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THE IMPORTANCE OF FEAR AND ANXIETY IN PREDICTING BLOOD DONATION INTENTION

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BACKGROUND: About 94–97% of the eligible population never donate blood. The Theory of Planned Behaviour (TPB) is widely used to describe and understand donor motivation and to help predict donation intention, though little is known about the role of deterrents to donation such as fear and anxiety. It was hypothesized that higher medical fears would predict lower donation intention, and that this effect would be mediated by donation attitudes and self-efficacy (e.g., the belief in one's ability to manage the fear).

METHODS: 348 donors (n=78) and non-donors (n=270) living in Québec participated in the study (age=18–65; 24% female). Following written consent, data was collected by online questionnaires including: donation history, the Medical Fears Survey assessing various fears related to medical settings (MFS-SF; Olatunji et al., 2012), and a TPB questionnaire assessing donation attitudes and intention to donate (Godin et al., 2005).

RESULTS: There was a significant relation between higher medical fears and decreased self-efficacy ($\beta=-.075$, $t(221)=-3.93$, $p=.0001$) and attitudes ($\beta=-.031$, $t(221)=-2.90$, $p=.0041$), as well as decreased donation intention ($\beta=-.034$, $t(221)=-2.27$, $p=.025$). Higher self-efficacy and attitudes were also both positively associated with greater donation intention, $\beta=.26$, $t(219)=4.25$, $p<.0001$, and $\beta=.45$, $t(219)=5.66$, $p<.0001$, respectively. Because these paths were significant, bootstrapping analyses were conducted, confirming significant indirect effects of medical fears on intentions mediated by both self-efficacy ($\beta=-.0195$, CI= $-.0346$ – $-.0090$) and attitudes ($\beta=-.0142$, CI= $-.0285$ – $-.0047$). Finally, the direct-effects of medical fears on intention became non-significant when controlling for self-efficacy and attitudes, suggesting full mediation, $\beta=.013$, $t(219)=1.20$, $p=.23$. 44% of the variance in donation intention is accounted by both the proposed mediators, $R^2=.436$. When analyses were done separately for donors and eligible non-donors, these patterns were present mainly among non-donors. Donors showed slightly less pronounced effects possibly due to the fact that these types of fears are lower among those who actually choose to donate.

CONCLUSION: Those with higher fears have lower intentions to donate as a result of reduced self-efficacy and attitudes to donate. Identifying and addressing fear and anxiety among donors is of particular practical importance for both donation clinics and promotional campaigns.

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A071

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USING EXPECTANCIES AND VALUES TO PREDICT HEALTH-RELATED OUTCOMES: HOW MEASUREMENT AFFECTS THE PREDICTION OF MARIJUANA USE

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Background. The expectancy-value (EV) framework is one of the most prominent approaches to understanding and predicting psychological and behavioral outcomes. By and large, EV models assume that 1) expectancies and values should be aggregated multiplicatively, and 2) these factors should be assessed using bipolar response scaling. However, the validity, theoretical implications and practical applications of these assumptions have yet to be examined.

Method. For 301 participants (59% female, 73% white, mean age=19.0 years, 72% used marijuana at least once), aggregation (additive/multiplicative) and scaling (unipolar/bipolar) of expectancies and values regarding marijuana use were systematically varied in a 2x2 within-subjects experimental design, within the framework of the Theories of Reasoned Action and Planned Behavior. Outcomes included participants'; intentions to use marijuana, frequency of marijuana use over the past year, and typical social weekend use over the past 30 days.

Results. Multiplicative aggregation and bipolar scaling combined to consistently increase the predictive power of attitudes, and decrease that of subjective norms. This same pattern was demonstrated with the addition of perceived behavioral control to the model. Additive aggregation of EV factors consistently predicted the least variance in marijuana use intentions and behavior, as compared to multiplicative aggregation.

Conclusion: Differential aggregation and scaling can profoundly influence the impact of attitudes and norms on intentions and behavior. These findings also have significant implications regarding the psychological nature of these factors, how to improve their predictive power, and future research to assess the generalizability of the current results to other research populations, designs, settings, constructs and behaviors.

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A072

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USING NARRATIVES TO ALTER CIGARETTE VALUATION: REINFORCER PATHOLOGY INTERPRETATION

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According to the reinforcer pathology, commodities with abuse liability are excessively preferred in terms of immediacy (i.e., delay discounting) and excessively valued (i.e., high demand) by clinical populations compared to controls. According to the narratives theory, individuals presented with an economic scarcity narrative (job loss and related income depletion) discount the future more compared to those presented with neutral narratives. In this study, we tested the reinforcer pathology model by manipulating delay discounting using the scarcity narrative. We hypothesize that, compared to the control condition, an intervention involving economic scarcity will increase not only rates of discounting but drug valuation as well. One hundred and thirty-five smokers were recruited from an online crowdsourcing (Amazon Mechanical Turk, or MTurk) to assess the discounting of hypothetical delayed money and valuation of cigarettes after being randomly assigned to one of two economic narratives (scarcity and neutral). Analysis showed that the scarcity narrative increased the participants'; choice preference to the immediate but smaller rewards ($p=0.000$) compared to the neutral narrative. Moreover, reading and vividly imagining the scarcity narrative significantly increased cigarette';s valuation (0.042) compared to reading and vividly imagining the neutral one. These findings are consistent with the notion of reinforcer pathology suggesting that delay discounting is a valuable target for interventional therapies that aim to alter cigarette valuation and therefore consumption. In addition, this study findings demonstrated that using narratives to manipulate discounting may show potential as a component of future behavioral addiction interventions.

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A073

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A COUPLES-BASED APPROACH FOR INCREASING PHYSICAL ACTIVITY AMONG COUPLES WITH TYPE 2 DIABETES: A PRELIMINARY STUDY

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Collaborative implementation intentions (collaborative IIs) involve a couple planning when and where they will perform a specific physical activity (PA) behavior and have been shown to be more effective than individual IIs for some health behaviors. The current study examined feasibility and acceptability of a collaborative IIs intervention within a type 2 diabetes (T2D) population and examined preliminary evidence of the efficacy of collaborative IIs to increase PA and improve other psychosocial outcomes. Participants (N = 40 couples, 80 individuals) included adults with T2D and their romantic partners. A 3-arm (collaborative IIs, individual IIs, control) 6-week intervention was examined using a prospective, longitudinal, experimental design. Accelerometers and the International Physical Activity Questionnaire (IPAQ METs) were used to assess PA. Psychosocial measures included self-efficacy for PA, partner investment in diabetes management, and PA social support. Participants in both experimental conditions reported the intervention was acceptable, rating the intervention highly in the categories of “beneficial”, “pleasant,” “good”, “valuable”, and “enjoyable,” and reported being highly committed to the PA plans they developed. Further, 32 couples were retained through 6 weeks. A linear regression controlling for baseline IPAQ METs and baseline depression revealed that the effect of condition on IPAQ METs at 6 weeks was in the intended direction and approached statistical significance [$M_{\text{CollaborativeII}} = 1711.24$, $SD = 369.29$; $M_{\text{IndividualII+Control}} = 758.77$, $SD = 299.92$; $B_{\text{condition}} = 952.45$, $p = .06$. The full model explained 49% of the variance in IPAQ METs [$F(3, 28) = 2.93$, $p = .05$, $R^2 = .49$]. The collaborative II condition did not predict an increase in PA as measured by accelerometer compared to the other conditions. A linear regression controlling for baseline PA social support, diabetes distress, depression, and patient gender, revealed that condition significantly predicted PA social support at 6 weeks ($M_{\text{CollaborativeII}} = 3.08$, $SD = .12$; $M_{\text{IndividualII+Control}} = 2.63$, $SD = .10$; $B_{\text{condition}} = .49$, $p < .01$). The full model explained 89% of the variance in PA social support [$F(5, 29) = 21.74$, $p < .001$, $R^2 = .89$]. Change in the other psychosocial outcomes did not differ among conditions. Results indicate a collaborative IIs intervention was feasible and acceptable and may improve PA in adults with T2D.

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A074

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IF YOU BUILD IT, WILL THEY COME, ENGAGE, AND STAY? MOTHERS IN MOTION LIFESTYLE INTERVENTION CHALLENGES AND LESSONS LEARNED

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Mothers in Motion (MIM), a community-based lifestyle intervention, was designed to reduce stress and increase healthy eating and physical activity with the ultimate goal of preventing further weight gain in low-income overweight or obese mothers with young children. MIM was a collaborative program between researchers and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) in Michigan. In this paper, we will present key challenges and lessons learned regarding recruitment, intervention procedures, data collection, and retention. We will also recommend strategies to overcome these challenges. Recruitment. Our recruitment was conducted by peers of the target population. By addressing the unique challenges of working with peer recruiters we gained a deeper understanding of the target population. For example, we learned that gaining recruiters' trust in the intervention's usefulness affected recruitment success. Peer recruiters helped identify reasons that many consented participants were not following up by enrolling in MIM. Showing preview videos and previous participants' success stories motivated WIC professionals to refer their clients to participate in MIM. Intervention. Our intervention participants watched MIM videos in DVD format at home and joined peer support group teleconferences led by peer educators and WIC dietitians trained in motivational interviewing (MI) techniques and group facilitation skills. We experienced significant challenges in training our moderators to routinely apply MI skills. We also learned that our intervention participants enjoyed sharing tips and challenges to help their young children eat healthier, but not as much for themselves during the peer support group teleconference. Moreover, participants preferred sharing information from MIM regarding psychological distress more than healthy eating and physical activity. Data collection. While data collection via phone reduced literacy challenges, contacting women to schedule a phone interview proved to be time consuming. Retention. We learned that text messages with caring content and tailored to each individual participant increased success of retention. Also, a positive relationship between peer recruiters and participants enhanced retention. Retention rates were increased when we used diapers as incentives. Also, life events affected retention.

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A075

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LESSONS LEARNED FROM THRIVE FOR HEALTH: A LIFE SKILLS-BASED INTERVENTION TO PROMOTE HEALTHY WEIGHT IN LOW-INCOME PRESCHOOLERS

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Purpose. This paper presents lessons learned from implementing THRIVE for Health, a parent-focused life skills-based intervention to promote healthy weight in preschoolers from low-income families.

Methods. THRIVE is an ongoing randomized-controlled trial for low-income parents of children age 2–5. Parents are recruited through WIC, Head Start, and flyers posted at community locations. The 12-week intervention addresses self-care, eating healthy/doing family activities on a budget, communication, and time/budget management. The intervention is delivered via in-person sessions, coaching telephone calls, text messaging, and print materials. The control arm participate in a children's book club. Measures assess changes in child diet, physical activity, and weight, and parental quality of life. Thirty-six parents are currently enrolled and we are on target to meeting our study goal of 40 parents total. Lessons learned have come in the areas of recruitment, implementation, measurement, and retention.

Results. Parental recruitment was a challenge. To address this, we identified two research assistants with backgrounds in public health and psychology, prior experience with children, and highly enthusiastic about working with disadvantaged families. The research assistants are highly zealous about the project and committed to ensuring that it is a success; making these staff-related changes helped to improve parental recruitment significantly. Within program implementation, we found parents were failing to attend group sessions. To navigate this, we offered the option to choose between group and one-on-one sessions; all participants; to-date have opted for one-on-one, thus, increasing parental engagement. While distractions from children posed challenges in-home, we learned to allot extra time for meetings and have an additional research assistant on-hand to engage children. Keeping to the 12-week intervention timeline was a challenge, given participants'; life stressors/work schedules; we learned to be flexible to accommodate their preferences. Measurement was the third challenge area, with participants taking a long time to complete surveys; thus, we scaled down measures to those most relevant to the study outcomes. Additionally, obtaining post-intervention measures proved to be a challenge when participants changed telephone numbers. Making unscheduled home visits and organizing group celebrations helped to address this issue. Retention has not been a major issue, likely because participants establish positive relationships with the interventionists and perceive that the intervention is addressing their needs. Incentives are also provided.

Conclusions. Lessons presented may inform other researchers in developing, implementing, and evaluating obesity interventions for children from low-income families.

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A VEGETARIAN DIET DOES NOT NECESSITATE HEALTH BEHAVIORS: HEALTH GAINS MAY BE DRIVEN BY DIET ALONE

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Introduction. Recent work has shown that limiting the consumption of animal products leads to beneficial health outcomes, such as reducing the risk for heart disease, diabetes, and cancer. Simultaneously, it is unknown whether the health behaviors of vegetarians differ from omnivores, which could in part be the driver of the differences in health outcomes. We hypothesize that no differences between omnivores and subgroups of vegetarians will be found, supporting the idea that the health benefits of vegetarian and vegan diets are driven largely by differences in food intake alone.

Methods. Community participants completed a battery of online self-report questionnaires, including demographics, cigarette smoking and quantity, height, weight, exercise length, frequency of exercise, and the Alcohol Use Disorders Identification Test (AUDIT) to measure problematic alcohol use. To determine vegetarian group status participants were asked if they restrict any animal product from their diet. If they responded 'no,' they were categorized as omnivores ($n = 220$; 75% female). Those who responded 'yes' were then redirected to more specific questions regarding their diet. "Meat reducers" ($n = 67$; 84% female) were defined as those who minimized meat in their diet or who ate some meat but restricted others (e.g., ate chicken but refrained from beef). "Lacto-ovo-vegetarians" ($n = 108$; 81% female) were defined as those who restricted animal flesh but consumed dairy and eggs. "Vegans" ($n = 356$; 84% female) were defined as restricting all animal products from the diet. Participants were compared in a series of ANOVA and chi-square.

Results. Vegetarians and omnivores did not differ on basic demographics, with age, gender, and ethnicity all being non-significant (all $p > .05$). No significant differences were found on any measures of health behavior, including exercise frequency ($F(3,505) = 1.32$; $p = .27$; partial eta sq $< .01$), exercise length ($F(3,466) = .51$; $p = .68$; partial eta sq $< .01$), AUDIT scores ($F(3,389) = 1.63$; $p = .18$; partial eta sq $= .01$), cigarette smoking ($\chi^2 = 5.48$; $p = .48$; $\Phi = .09$), cigarette quantity ($F(3,652) = .89$; $p = .45$; partial eta sq $< .01$), or body mass index ($F(3,711) = 1.55$; $p = .20$; partial eta sq $< .01$).

Discussion. These null results support the hypothesis that the benefits of vegan and vegetarian diets are largely driven by difference in the diet itself, and not differences in health behaviors. The results are interesting for two reasons: 1. They may suggest that switching to a vegan diet can be beneficial for health without changing behaviors, though future work is needed, and 2. Those who restrict meat from the diet appear to engaging in unhealthful behaviors at similar rates to their omnivorous counterparts, and therefore practitioners should not assume a healthy lifestyle when engaging with a meat-restricting client.

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A077

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ADOLESCENTS DRINK MORE SUGAR SWEETENED BEVERAGES WHEN THEY ARE AVAILABLE AT HOME REGARDLESS OF AVAILABILITY AT SCHOOL

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Background: Sugar sweetened beverage (SSB) consumption is the largest source of added sugar and caloric intake in US adolescents' diets. It has been argued that the increased intake of SSBs has contributed to the rising prevalence of obesity. The availability of foods and beverages in various behavioral settings (e.g., home, school, community) to which adolescents are exposed can influence their food and beverage choices and consumption. It is unknown if efforts to reduce the availability of SSBs in the home may be less impactful when adolescents have access to SSBs elsewhere.

Objective: To examine the association between SSB availability at home and adolescent daily SSB consumption, and to assess whether this association is consistent across school and school neighborhood SSB availability.

Methods: Secondary analyses were conducted using data from the Family Life, Activity, Sun, Health and Eating (FLASHE) study of 1,484 adolescents (12–17 years old). We conducted ordinal logistic regression analyses to examine the association between self-reported SSB availability in the home (never, rarely/sometimes, often/always available) and adolescents' daily SSB consumption (non-daily [i.e., <1 per day], 1–<2 daily, ≥2 daily), adjusting for adolescent age, sex, race, BMI, parent marital status, and housing security. We conducted stratified regression analyses to examine the association by school and school neighborhood SSB availability.

Results: A third (32.6%) of adolescents were non-daily consumers of SSBs, 33.9% consumed 1<2 SSBs daily, and 33.5% consumed ≥ 2 SSBs daily. Almost half (44.4%) reported that SSBs were often/always available in their home. More frequent SSB availability at home was associated with greater SSB consumption (OR:3.12[CI:3.11–3.13] for rarely/sometimes available at home; OR:7.05[CI:7.02–7.07] for often/always available at home, compared to never available). Associations were similar regardless of availability of SSBs at school or in the school neighborhood.

Conclusions: Regardless of availability of SSBs in other environments, availability in the home remains an important predictor of SSB consumption and a target for obesity prevention efforts. Parents can play a critical role in reducing adolescent SSB consumption by restricting availability of SSBs in their home. Public health practitioners and clinicians are well positioned to share this information with families to promote child health and decrease the prevalence of childhood obesity.

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BARRIERS AND FACILITATORS TO HEALTHY EATING POSTPARTUM AMONG NON-HISPANIC BLACK MOTHERS.

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Poor diet quality is common among women, particularly during the postpartum period, which places themselves and their families at risk for obesity. To better understand barriers and facilitators to healthy eating during the first two years postpartum, in-depth interviews were conducted with 22 non-Hispanic black mothers who participated in the *Mothers and Others: Family-based Obesity Prevention for Infants and Toddlers* intervention trial. Ten themes were identified around barriers and facilitators to healthy eating. Mothers believed that time and taste were significant barriers to eating healthy. Social influence and social support had both positive and negative influences on mothers'; ability to adopt healthy eating behaviors. Despite their children often being a facilitator to healthy eating, many mothers struggled with finding the time, energy and desire to focus on themselves when it came to healthy eating. Healthy eating appeared to be what most of the mothers strived for, but time, taste, social influence and lack of social support made it difficult. Future interventions should focus on strategies that incorporate goal-setting and self-monitoring, while including hands-on skill-building activities around cooking and grocery shopping. Emphasizing time-saving methods for planning and preparing healthy meals and snacks and enrolling a support person to participate in the study with mothers, to learn and adopt new behaviors alongside her, may elicit behavior change.

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BMI AND PSYCHOSOCIAL IMPAIRMENT ASSOCIATED WITH ADULT PICKY EATING: A LATENT PROFILE ANALYSIS

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Research on children has identified eating behavior profiles that include picky eating (PE) behaviors and high satiety responsiveness that are associated with underweight and elevated psychosocial comorbidity. These associations have not been investigated in adults. Better understanding the traits that cluster with adult PE, including its relationship with other food approach/avoidance behaviors, is important because it is currently unclear how adult PE is associated with factors such as anxiety, eating-related interference, and inadequate fruit and vegetable intake, which could lead to serious social and nutrition-related impairment. The aim of the present study was to identify eating behavior profiles in an adult sample and examine differences between observed eating profiles on measures of psychosocial impairment and BMI. It was hypothesized that adult PE would cluster with other food-avoidance traits, and a PE profile would predict elevated social eating anxiety, depression, and eating-related impairment compared to normative eating profiles.

A sample of 1339 MTurk workers (60% women, 80% Caucasian, M age=40.39) completed an online survey which included: a modified CEBQ for adults; Adult Picky Eating Questionnaire (APEQ); Eating Disorder Diagnostic Scale (EDDS); PHQ-9; Clinical Impairment Assessment; and a measure of social eating anxiety. Latent profile analysis (LPA) was employed to identify eating profiles based on adult CEBQ subscales ANCOVAs (covarying gender and age) compared profiles on outcome variables and BMI.

The LPA converged on a 4-profile solution similar to profiles observed in children: "moderate" (no impairment; $n=590$), "PE" (restricted eating; $n=222$), "binge/disordered" (chronic overeating; $n=86$), and "joyful" (eating for pleasure; $n=441$). The PE profile showed low food enjoyment, high satiety responsiveness, and high PE. ANCOVAs indicated that profiles differed significantly on all outcomes. Post hoc tests indicated that PE showed significantly higher levels of social eating anxiety ($h^2=.032$) and lower BMI ($M=26.18$ $h^2=.022$), compared to all other profiles. The PE group showed elevated depression ($h^2=.030$) and eating-related impairment ($h^2=.021$) in comparison the moderate and joyful groups.

This study supports an operative definition of adult PE based on a profile of food approach and avoidance behaviors, and highlights the contrast between the social costs and potential protective factors (e.g., lower BMI) associated with adult PE.

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COMMUNITY-BASED COMMUNITY-LED PROMOTION OF HEALTHY COOKING: A PILOT STUDY WITH COMMUNITY HEALTH WORKERS

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Background: Diet with healthy food preparation is a top public health priority to combat obesity in the U.S. The Oldways scientifically and culturally based curriculum for healthy eating (A Taste of African Heritage Cooking) focuses on whole grains, herbs/spices, legumes, tubers, vegetables and fruit.

Purpose: The purpose of this pilot study was to test the feasibility of Community Health Workers (CHWs) and community-based host organizations to co-present Oldways cooking classes to community residents. Emphasis was on the work of the community (CHWs and hosts) to recruit residents, implement the program, and evaluate behavior change, receptivity and dissemination.

Methods: Five neighborhood organizations were recruited to host cooking classes and were offered an honorarium if they agreed to: 1) provide their kitchen for the classes, 2) recruit community residents to participate in the classes, and 3) provide a volunteer to help facilitate the classes to assure sustainability within the organization and neighborhood. CHWs were trained to conduct the classes along with the host volunteer. Pre- and post-surveys were administered that examined changes in food purchasing and preparation, receptivity to the program, and dissemination efforts into the community.

Results: Five host organizations were successfully recruited but one dropped because of noncompliance with requirements. The four host organizations had a total of 42 pre-surveys and 40 post-surveys. Some participants increased use of targeted foods, but no significant differences were found from baseline to follow-up. Participants appreciated eating in more traditional ways (n=21). The majority of participants were positive about the classes stating that they would make no changes (n=22) or would increase the classes (n=5). Twenty (57%) said they had cooked the recipes at home. Participants reported their intentions to share cooking methods with family (n=34) and with friends (n=32), and to prepare food using the Oldways methods to share with family and friends (n=34).

Conclusions: This pilot study demonstrated the feasibility of CHWs and community organizations working together to bring healthy food preparation into the neighborhoods. Participants liked the program and intended to share with family and friends.

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A081

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DEVELOPMENT OF A SURVEY TO ASSESS STUDENT DIET PATTERNS AND PERCEPTIONS OF HEALTH-PROMOTING PRACTICES AT SCHOOL

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Introduction. School-based interventions are recommended to prevent childhood obesity. Such interventions are typically multi-level and complex; thus, robust evaluation methods are needed to determine student-level reach and impact. Few instruments have been validated to assess two key outcomes: (1) perceptions of the school environment and (2) school-specific dietary patterns. This study describes validation of a survey that addresses these outcomes.

Methods. Part 1 of the survey included 47 items with 5-item Likert response sets (never to always; totally disagree to totally agree), which asked students their perceptions of the policies, physical environment, and classroom practices related to healthy eating/physical activity at their school. Part 2 assessed usual intake (i.e. frequency, location obtained, and type of food consumed) of breakfast and lunch using a 5-item Likert response set (never to always). Types of foods consumed were presented by MyPlate categories (i.e., Fruits, Vegetables, Grains). Students in 3rd, 6th and 9th grades participated in the two-phased study: (1) cognitive pre-testing (n=10) and (2) validity and reliability testing (n=58). Students took the surveys twice, one week apart, to assess test-retest reliability of Parts 1 and 2. Daily food records over 5 days were used to validate Part 2. Percent agreements described reliability and validation results. Acceptability of ≥70% was considered acceptable, ≥80% good, and >90% excellent.

Results. Cognitive pre-testing provided feedback on content and age-appropriateness. In the validity/reliability study, students were 53% male, 79% Caucasian, and represented schools in 8 of 24 (33%) state school districts. Percent agreements were acceptable for both test-retest reliability and validation of Parts 1 and 2. For Part 1, agreement between the two survey administrations ranged from 66%-89%. Items with lower than acceptable agreement (n=13) were adapted or removed; the final version of Part 1 consisted of 34 items in 4 subscales (alpha ≥0.78). For Part 2, 91% ate breakfast and lunch most or all days. Most (n=51, 88%) usually got breakfast from home. Lunch locations included home (n=33; 57%), school (n=17, 29%), both home/school (n=6; 10%), or other (n=1; 2%). Agreement for breakfast location was 79% for reliability and 85% for validation. Lunch agreement was 81% and 75%, respectively. For types of foods consumed at breakfast, reliability agreement ranged from 73%-92%, and validation agreement ranged from 68%-91%. For types of foods consumed at lunch, ranges were 75%-95% and 75%-88%, respectively.

Conclusion. Both parts of the instrument demonstrate acceptable reliability and validity to assess perceptions of the school environment and usual dietary patterns in students across a broad age range. This demonstrates appropriateness for use in evaluation of school-based obesity prevention initiatives.

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DRIVE FOR THINNESS MEDIATES THE RELATIONSHIP BETWEEN BMI AND DIETARY RESTRAINT

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Introduction: Research has established that dietary restraint, the conscious attempt to restrict food intake, is associated with an increase in body mass index (BMI). The opposite relationship has also been found: that people with a higher BMI are more likely to attempt to restrict their food intake. In light of data that suggest drive for thinness is also associated with dietary restraint, we hypothesized that the relationship between BMI and dietary restraint would be mediated by drive for thinness.

Methods: A community sample ($n = 417$, 80.4% female, M Age = 31.33 ± 13.13 , M BMI = 24.51 ± 6.98) filled out a battery of online questionnaires focused on eating and health behaviors, including the drive for thinness subscale of the Eating Disorder Inventory (EDI), and the “restrained eating” subscale of the Eating Disorder Examination Questionnaire (EDEQ). The hypothesized mediation model was tested using Hayes’ (2013) PROCESS macro.

Results: A Pearson’s product moment correlation showed that dietary restraint, BMI, and drive for thinness were all significantly correlated ($p < .05$). The direct regression of dietary restraint on BMI was significant, $\beta = .13$, $t(411) = 2.92$, $p = .003$. The regression of BMI on drive for thinness was also significant, $\beta = .18$, $t(412) = 3.98$, $p < .001$. The regression of drive for thinness on restraint, controlling for BMI, was significant $\beta = .63$, $t(411) = 15.52$, $p < .001$. Controlling for drive for thinness scores, BMI was no longer a significant predictor of dietary restraint, $\beta = .02$, $t(411) = .62$, $p = .54$. A Sobel test confirmed full mediation in the model ($z = 3.84$, $p < .001$).

Discussion: Findings provide initial evidence that the drive for thinness fully mediates the relationship between BMI and dietary restraint. Our findings add to our understanding of the relationship between BMI and dietary restraint and have implications for the development of more effective interventions targeting eating disorder behaviors and symptoms. It may be beneficial to look at drive for thinness as a proximal predictor of dietary restraint and target the cognitions centered around the “thin ideal”.

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EATING BEHAVIORS AND PREDICTORS OF WEIGHT GAIN DURING RAMADAN IN A MUSLIM COMMUNITY SAMPLE

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Introduction: Preliminary research suggests that religious fasting during Ramadan is associated with modest weight loss, but that most of the weight lost during Ramadan is regained within a few weeks. This study aimed to examine predictors of weight change in a traditionally understudied population of practicing Muslims pre- and post-Ramadan. It was hypothesized that Muslim participants would gain weight while fasting for Ramadan only if they endorsed disordered eating behaviors and attitudes.

Methods: Muslim community members ($N = 72$, 84.3% female, Age = 33.46 ± 8.89 , BMI = 25.18 ± 6.7) were recruited in person at a religious community center as well as online via a social media platform. Participants completed a questionnaire on eating behaviors prior to Ramadan (time 1) and up to two weeks after fasting ended (time 2). Measures relevant to this study included the Binge Eating Scale (BES), a measure of “loss of control” eating and binge severity, and the Dutch Eating Behaviors Questionnaire (DEBQ), a measure of eating styles.

Results: 50% of participants ate Suhoor (breakfast) every morning and 72.7% reported that they ate about the same amount or less during Suhoor compared to their typical breakfast outside of Ramadan. 88.6% of participants ate Iftar (evening meal) every night and 71.4% reported that they ate about the same or more during Iftar compared to their usual evening meal. Additionally, 19.4% of participants reported that they experienced a loss of control over eating during Iftar. There was no significant change in BMI (M diff = $.23 \pm 1.05$, $t(30) = 1.21$, $p = .24$, $d = .02$) or reported binge eating severity (M diff = 1.25 ± 5.01 , $t(19) = 1.1$, $p = .28$, $d = .16$) between time 1 and 2. Binge eating severity and eating in response to “diffuse” emotions was significantly and positively correlated with change in BMI ($p = .04$; $p = .02$, respectively).

Discussion: Perceived loss of control or binge eating and eating in response to emotions was associated with weight gain during Ramadan. Findings contribute to a better understanding of the health-related consequences of religious fasting, and point to interventions that could be used to enable the Muslim community to make healthier decisions during Ramadan.

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EXAMINING ASSOCIATIONS BETWEEN BASELINE STRESS, DEPRESSIVE SYMPTOMS, AND DIET QUALITY AMONG DIVERSE PREGNANT WOMEN

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Background: Optimal diet quality during pregnancy is important for increasing the chances of successful birth outcomes. During pregnancy, women have increased risk of experiencing stress and depressive symptoms, both of which have been associated with poor diet quality. Few studies have examined racial differences in these factors among women who begin pregnancy overweight or obese. Our purpose was to examine the associations between baseline stress, depressive symptoms, and diet quality among women enrolled in the Health in Pregnancy and Postpartum (HIPP) study.

Methods: HIPP is a randomized controlled trial targeting excess gestational weight gain (GWG) among overweight and obese pregnant women in South Carolina (N=133 enrolled to date). Baseline demographic and psychosocial data were collected through self-report surveys. Participants completed two ASA24 diet recalls. Pearson correlations, t-tests, and linear regression models were used to summarize the data.

Results: At baseline, participants were racially-diverse (65% White, 34% African-American (AA)), young (mean age=30), and generally well-educated (60% college graduates). Participants had low levels of stress (mean Perceived Stress Scale score= 4.7 ± 3.2 points, max=16 points) and depressive symptoms (mean Edinburgh Prenatal/Postnatal Depression Scale score= 5.7 ± 3.9 points, max=30 points). Participants had poor diet quality (mean Healthy Eating Index (HEI) score = 50.5 ± 12.6; max score=100). Stress had a weak negative relationship with total HEI scores ($r=-0.20$; $P=0.02$), while depressive symptoms were not significantly related to total HEI scores ($r=-0.11$; $P=0.19$). There were no differences in stress, depressive symptoms, or overall HEI scores by race (P 's all >0.05). AA participants had significantly higher refined grain consumption (6.6 ± 3.18 oz.) compared to their White counterparts (5.3 ± 3.4 oz.; $P=0.04$). There were no racial differences in the other HEI diet components. Perceived stress significantly predicted lower HEI scores ($b=-0.80 \pm 0.34$, $P=0.02$), while depressive symptoms did not significantly predict HEI scores ($b=-0.37 \pm 0.28$, $P=0.19$). Race did not moderate the relationship between stress and HEI scores ($b=0.10 \pm 0.69$, $P=0.88$).

Conclusions: Overall, higher stress significantly predicted lower diet quality among HIPP participants and overall diet quality was poor; however, race was not a moderator. Future research should examine if stress management interventions can improve diet quality in pregnancy.

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FACTORS UNDERLYING SELF-REPORT OF NUTRITION LABEL USE FREQUENCY

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Nutrition labels on US packaged foods are intended to communicate the recommendations put forth in the Dietary Guidelines for Americans¹. The majority of studies examining label use rely on measures of label-use frequency (LUF), which have advantages but make implicit assumptions underlying factors that drive frequency of use. LUF reflects the need for the label information to inform healthy food choices. The need, in turn, reflects what consumers already know - and their interest in knowing - about the foods they buy. Thus, lower label use can result from: 1) already knowing the information, and 2) lacking interest in eating healthy foods. In order to accurately interpret LUF measures, it is important to have a clear understanding of these nonuse reasons. We examined moderating effects of *already know* and *not interested* in eating healthy foods, on the relationship between LUF on the one hand and attitudes and abilities surrounding understanding and using nutrition information on the other.

Sixty female college students indicated “the frequency with which you use food labels to make choices regarding healthful food to buy, especially when buying foods for the first time,” and, “When and if you do not use labels, it is because 1) you already know if the foods are healthy and 2) you’re not interested in eating healthy foods.” They also completed measures assessing attitudes and abilities related to understanding and using nutrition information. Data were analyzed in two 2(LUF: low, high) x 2(Nonuse: agree, disagree) ANOVAs on abilities and attitudes, as a repeated measure. Results showed a LUF x Already Know x Outcome type interaction, $p < .05$, such that abilities increased from Low- to High Agree in High- but not Low- LUF group, whereas attitudes increased from Low- to High-Agree in both LUF groups (Figure 1).

Figure 1. LUF x Already Know x Outcome type

Although the LUF x Not Interested ANOVA yielded a significant effect of LUF, $p < .001$, and a LUF x Outcome Type interaction, $p < .01$, neither the main effect of No Interest, nor the LUF x No Interest x Outcome type were significant, $F < 1$.

Findings indicate that Already Know reflects different characteristics for consumers who frequently versus infrequently use labels. For those who use labels less frequently, already know nonuse does not reflect objective measures of ability. An “already know” misperception could serve as a barrier for learning more about how to use nutrition information to select healthy foods.

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FEASIBILITY AND ACCEPTABILITY OF A BEVERAGE INTERVENTION FOR HISPANIC ADULTS

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Introduction: The consumption of green tea and Mediterranean lemonade and their constitutive polyphenols and *d*-limonene may serve as an effective strategy for improving cardiometabolic biomarkers. No research to date has assessed whether consumption of these beverages demonstrates acceptability and efficacy in a pilot study among overweight/obese Hispanics.

Purpose: The objective of this study was to assess the feasibility and acceptability of a beverage intervention in obese Hispanic adults.

Methods: Hispanic adults were randomized to one of three beverages: Mediterranean lemonade (ML), Green Tea (GT), or flavored water control (FW). After completing a 2-week washout period, participants were asked to consume 32 oz./day of study beverage for 6-weeks while avoiding all other sources of tea, lemonade, citrus, juice, and other sweetened beverages; water was permissible. Fasting blood samples were collected at baseline and 8-weeks to assess the primary efficacy outcomes: total cholesterol, high-density lipoprotein (HDL), and low-density lipoprotein (LDL). Secondary outcomes included fasting glucose and hemoglobin A1c (HbA1c).

Results: 52 participants were recruited over 6 months; 50 were randomized (ML, n=21; GT; n=19; FW, n=10). The study population had a mean age of 44.6 (SD \pm 10.2) yrs; BMI: 35.9 (\pm 4.6) kg/m²; 78% were female. Four were lost-to-follow-up and 2 were excluded prior to treatment due to health concerns. Three participants in the ML group switched to GT at 3-weeks due to gastrointestinal distress. Forty-four (88%) completed the 8-week assessment. Self-reported adherence was high, with 93% of the drinks being consumed by 44 completers. No significant change in total cholesterol (mg/dL) from baseline was shown (-1.7 (95%CI: -14.2, 10.9), -3.9 (-17.2,9.4) and -13.2 (-30.2,3.8) for ML, GT and FW respectively); HDL (mg/dL) changed by -2.3 (-5.3,0.7) (ML), -1.0 (-4.2,2.2) (GT) and -3.9 (-8.0,0.2) (FW); LDL (mg/dL) changed by 0.2 (-11.3,11.8) (ML), 0.5 (-11.4,12.4) (GT) and -9.8 (-25.0,5.4) (FW). Fasting glucose (mg/dL) increased by 5.2 (2.6,7.9) (ML), 3.3 (0.58,6.4) (GT) and -1.4 (-5.0,2.2) (FW); no change in HbA1C was demonstrated; weight change (kg) was -0.1 (-1.0,0.8) (ML), -0.30 (-1.3,0.7) (GT) and -1.7 (-3.0, -0.53) (FW).

Conclusion: These results suggest that changes in cardiometabolic biomarkers were not demonstrated with this beverage intervention, with the exception of FW consumption. However, recruitment and retention figures indicate that a larger scale trial, designed to demonstrate definitive efficacy, is feasible.

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HOLD THE FRIES: A SYSTEMATIC REVIEW OF EXECUTIVE FUNCTION AND DIETARY INTAKE AMONG YOUTH

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Over the past two decades, unhealthy dietary intake has emerged as a key contributor to the obesity epidemic. Although the determinants of dietary intake are multifaceted, some individuals appear to struggle with resisting unhealthy foods more than others. There is evidence to suggest that these differences may be linked to impairments in executive function (EF), which can be observed in childhood. Despite the importance of investigating the relation between EF and dietary intake, methodological challenges, including lack of longitudinal research, have made the interpretation of this literature difficult. The current study sought to systematically review 1) cross-sectional research on associations between EF and dietary intake in youth ages 1–18, and 2) longitudinal research investigating EF as a predictor of dietary intake in this same age group. Specifically, the contribution of the major domains of EF (i.e., inhibition, working memory, cognitive flexibility) and their relation to dietary intake were examined while contextualizing the changes in EF that occur across development.

Initially, 4,390 abstracts were screened for eligibility. Independent coders then reviewed the full text articles of all abstracts that met criteria. A total of 13 articles were included in the review. Results demonstrated moderate support for a cross-sectional association between poor EF and unhealthy dietary intake in children, while showing an equivocal relation between EF and dietary intake longitudinally. Although most studies measured only one domain of EF, inhibition, similar patterns were found for the few studies that measured either working memory or cognitive flexibility. Heterogeneity between cross-sectional and longitudinal findings was likely impacted by the small number of longitudinal studies in the literature (n=2). Additionally, the method of EF measurement (self-report vs. objective neuropsychological measure), the way EF was conceptualized (unitarily or domain-specific), and which aspects of diet were considered (overall nutrient intake vs. consumption of specific foods), also contributed to the mixed findings. Future research should employ longitudinal designs to investigate the causal impact of EF on diet using a multi-method approach to measuring EF, while also considering the rapid development of EF skills in children between childhood and early adolescence.

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PORTION CONTROL PLATES OUTPERFORM PORTION CONTROL TRAINING FOR REDUCING PORTION SIZES IN YOUNG ADULTS

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Objective: Large portion sizes are believed to promote energy imbalance and contribute to high rates of overweight and obesity. Portion control strategies include portion size training and portion control dishware. Although these approaches are not mutually exclusive, we hypothesized that using a portion control plate would be more effective than brief portion size training in yielding smaller self-served portion sizes. We further hypothesized that portion size training would be more effective than a reading passage in increasing knowledge of recommended portion sizes.

Design: The study was a 2 (Plate; portion control vs. standard) x 2 (Training; portion control training vs. portion size reading) between-participants design. Participants completed portion size training or the reading and returned to the laboratory after 48 hours to select food portions of protein, grains, and vegetables. The portion size training was designed by a registered dietician.

Setting: A university psychology laboratory setting in the United States.

Subjects: Participants were 64 student volunteers (32 men and 32 women aged 20.0 ± 2.3 years).

Methods: Participants were randomized to 10 min portion size training or a brief reading about how portion sizes have increased, and also to using a portion control plate or a large standard dinner plate for self-selecting portion sizes of protein, grains, and vegetables.

Results: Training increased knowledge of correct portion sizes, as the interaction term was $F(2,62) = 13.61, p < .0005$. Simple main effects revealed that participants who received training had an increase in portion size knowledge between the first ($M = 3.61, SD = 1.8$) and second administration ($M = 8.39, SD = 2.5$), $p < .0005$. Use of a portion control plate also resulted in smaller portion sizes for protein, $F(1, 56) = 31.179, p < .001, \eta^2 = .35$, vegetables, $F(1,56) = 21.31, p_2 = .276$, and grains, $F(1,56)=23.76, p_2 = .298$. Brief portion size training had smaller or no effect. See Figures for means and standard errors.

Conclusion: Use of a portion control plate resulted in smaller portion sizes for protein, starch, and vegetables, and in contrast, brief portion size training had smaller effects. Although portion control was emphasized in the 2010 and 2015 USDA dietary guidelines, people have difficulty learning and consuming correct portion sizes. Portion control tools such as plate and dish designs appear to reduce self-selected portion sizes.

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RESULTS OF THE BUILDING HEALTHY COMMUNITIES PROGRAM ON YOUTH HEALTHY EATING KNOWLEDGE, ATTITUDES, SELF-EFFICACY AND BEHAVIOR

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While data trends show obesity levels among school-aged children have stabilized, prevalence rates remain high. It is recommended youth eat a variety of fruits and vegetables as part of a healthy diet, however, few children meet these goals. School-based interventions have the potential to reach a majority of children, especially when they involve multiple components. The purpose of this study is to determine the effectiveness of a multicomponent school-based program on children's healthy eating (HE) knowledge, attitudes, self-efficacy for HE, and eating habits over time. A quasi-experimental pre-post design over eight months was used with 4 treatment (Tx) and 2 comparison (C) schools in a large metropolitan area. Data were collected from a diverse group of 628 5th students (377 Tx, 251 C). To examine the mean differences and relationships of the students'; pre-post nutritional knowledge, attitudes-efficacy (SASE), and SPAN healthy eating index (SHEI) values, a path analysis was conducted. Both groups significantly ($\Delta = 52.03, p < .001$) increased their SHEI scores over time. The Tx SHEI post scores were significantly higher than the C post scores ($\Delta = 11.66, p < .001$). Tx post-knowledge ($M = 6.90$) was significantly ($p < .001$) greater than the C group ($M = 4.04$). The final, pruned model maintained good model fit ($CFI = .969, RMSEA = .041, 90\%CI [.010, .064]$). The Tx group had two significant ($p < .01$) indirect effects: a) pre-SASE through post-SASE to post-SHEI ($\beta = .13$), b) total effect of pre-SHEI predicting post-SHEI directly, and indirectly through post-nutrition knowledge and post-SASE ($\beta = .46$). Overall, the Tx model accounted for 14% of post-nutrition knowledge, 33% of post-SASE, and 35% of post-SHEI. Findings from this study showed: 1) a school-wide healthy school transformation program can improve HE knowledge and behavior among youth, 2) the magnitude of relationships between knowledge, SASE, and SHEI was not different between groups, and 3) nutrition knowledge is a significant predictor of both future knowledge and behavior. There was a significant change in HE behavior predicted by both SASE and knowledge. Among the Tx group specifically, there was a significant indirect effect of pre-SASE on post-HE behaviors (i.e., SHEI through post-SASE). In this study, we showed that compared to non-intervention schools, a school-based intervention can improve children's knowledge more, which can positively affect their behavior.

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TRD LIGHTLY: ADHERENCE TO LOW BURDEN SELF-MONITORING AND WEIGHT LOSS OUTCOMES IN A TIME RESTRICTED DIET TRIAL

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Intermittent fasting alternates between periods of fasting and non-fasting, and, despite absence of intentional calorie restriction, may have health benefits similar to continuous calorie restriction. The TRED study, a pilot time-restricted diet trial aided by technology, was conducted to determine if the diet is feasible and acceptable and causes weight loss. This project examined adherence to diet self-monitoring (SM) when subjects were asked to complete full food diaries (high burden) and when asked only to indicate meal, snack, or beverage intake without tracking specific food details (low burden). The hypothesis was that there would be greater adherence to SM with low burden. The criterion for feasibility of adherence to SM was set as > 65% of participants recording dietary intake on ≥80% of intervention days.

Healthy women with a BMI of 25–40 were recruited. During the 24-week intervention period, subjects were instructed to restrict eating to a 10 hour time window and record dietary consumption in a smartphone application. For 4 weeks throughout the study (weeks 1, 2, 12, and 24), subjects were asked to complete full food diaries. During the other weeks participants practiced low burden SM without intentional calorie restriction reinforced with weekly coaching phone calls for the first month, and then biweekly calls for the rest of the intervention.

Of the 42 women enrolled, 26 completed the 6-month assessment and their SM data during the intervention were analyzed. The mean age at baseline was 48.04 years ($SD=11.10$) and mean BMI was 32.68 kg/m² ($SD=4.43$). 13/26 (50%) of women who completed the trial recorded dietary intake on at least 80% of intervention days. There was no significant difference in average SM during high burden days ($M=71.70$, $SD=32.95$) and low burden days ($M=71.57$, $SD=31.27$). A comparison of proportions for SM adherence for each participant showed only 5/26 had a significant difference ($pSD=3.23$) or -1.14% of the baseline weight ($SD=3.79$). Linear regression demonstrated that adherence to SM did not predict weight loss ($\beta= -0.01$, $t(24)= -0.57$, $p=.57$, $R^2=.013$). Findings suggest that adherence to time-restricted feeding is challenging and not necessarily made easier by simplifying diet intake recording requirements. Nonetheless, even without intentional energy restriction, confining food intake to a 10 hour window appears to produce modest weight loss.

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BEYOND TRADITIONAL EDUCATION: INTERSECTIONS OF HEALTH, RACISM, AND COMMUNICATION

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Background: For 10 years, Tulane Center of Excellence in Maternal and Child Health and Tulane Prevention Research Center have partnered to host a seminar series on communication skills meant to enhance traditional public health education skills and professional development. In 2015, the series evolved from communication product-oriented trainings to focus on intersections of health, communication, and racism. Target audiences are public health students, practitioners, faculty, researchers, and community organizers. Seminars range from 1–1.5 hours, are free, open to the public, and held in an academic setting during the lunch hour.

Methods: This study evaluates the success of these seminars by analyzing self-reported post-seminar evaluations (using a Likert scale of 1–5 with 5 being the most positive response option) and comparing audience attendance data before and after the change in focus in 2015. The study also analyzes factors that may have facilitated more successful seminars during the post-change time period.

Results: Data show that median seminar attendance increased by more than 200% after the series changed focus from 2012–2014 (median=17; IQR: 15, 23.5) to 2015–2017 (median=53; IQR: 24, 87). Additionally, the proportion of attendees who were not affiliated with the university grew (2012–2014: 4%, n=11; 2015–2017: 22%, n=125). Post-seminar evaluation scores did not change significantly from the 2012–2014 series (average of 4.56) to the 2015–2017 series (average of 4.63). After the series changed in 2015, attendance data show that seminar topics with the highest median attendance focused on police violence (median=96; IQR: 87, 119), mass incarceration (median=74; IQR: 22, 96), mental health (median=73; IQR: 22, 87) and racism (median=69.5; IQR: 24, 87). Other factors related to seminar logistics were also analyzed; having a high-profile speaker (median=91.5; IQR=52.5, 107.5), providing food (median=74; IQR: 30, 87) and co-sponsoring seminars with student groups (median=74; IQR: 30, 87) resulted in higher median attendance.

Conclusions: Building upon communication trainings already in place was a logical way to engage public health students and professionals around effective communication related to racial health equity. The new series has attracted audiences outside of academia, which leads to richer presentations and interactions between academics and practice professionals. Providing food and co-sponsoring with students are also important factors in successful seminar implementation. The new focus aligns with university and state and local government agendas by providing learning experiences to understand the impact racism has on health and become comfortable talking about such.

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INTEGRATION OF NARRATIVE MEDICINE IN FAMILY MEDICINE PRACTICE - PRACTICING WHAT WE PREACH

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Evidence based interventions are the cornerstone of behavioral medicine practice. Physician wellness has been the focus of academic medicine research due to the relationship present between wellness and burnout, suicide, and general well-being and satisfaction and patient mental health. Educators have an obligation to inform their clinical practices with these interventions as well and support the use with those in training. The evidence base supporting narrative medicine for physician health is overwhelming. Despite this support, using evidence based information for physician mental health continue to be a taboo discussion so interventions focus mostly on wellness activities such as financial health and nutrition. While these wellness activities are important, there is evidence that physician wellness activities do not have a great impact on physician mental health. Wellness programs that focus on general wellbeing often fail to address the suffering and very real barriers that physicians face. The barriers to self-care are numerous with time, normalization of problematic symptoms, and stigmatization highlighted as concerns. The glaring issue is that patients receive much of their mental health from primary care providers, yet there continues to be a paucity of resources and stigma associated with the mental health of those providers which contributes to using wellness interventions as opposed to evidence based interventions.

Family Medicine, with the emphasis on longitudinal, holistic care and behavioral health should, therefore, encourage practical, introspective practices for resident and physician wellbeing. Narrative medicine has been identified as an empirically supported practice to facilitate physician self-awareness. Given the inherent difficulties associated with these practices but the clear utility of their purpose, we sought to examine the process of implementing such a program within our residency. We implemented a narrative medicine curriculum in our 6-6-6 Family Medicine residency. Program beginning in 2016. The current discussion will explore the integration and implementation of a narrative medicine and mindful medicine program in a family medicine residency program to further the discussion of the importance of providing care to providers in training.

This session is important to those involved in behavioral medicine and medical educators, as residents in particular face challenges such as burn out and depression. Having time for self-reflection and awareness as well as opportunity to practice mindful medicine through narrative medicine practices combats that. As a family medicine educator, being aware of the residents'; situation and helping them pick up ways of reflection to further improve their practice produces a mindful physician who will in turn continue to self-reflect and improve their patient care even after residency training.

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TEACHING TRAUMA-INFORMED PRIMARY CARE IN A VA HOSPITAL PRIMARY CARE CLINIC

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Despite the central role that psychological trauma can play in patient health, primary care providers often report discomfort discussing trauma and do not receive adequate training in this area (Green et al., 2011). The current study expands on a previous pilot study (Shamaskin-Garroway et al., 2017) and assesses the feasibility and effectiveness of a trauma-informed primary care (TIPC) curriculum integrated with the Center of Excellence in Primary Care Education, a VA interprofessional training program where health psychology residents learn and collaborate with members of other health professions. The year-long TIPC curriculum combines: 1) structured didactics about psychological trauma and impacts on health, 2) live observation of medical encounters individualized feedback from integrated health psychology resident on TIPC skills. Didactic sessions included "reflection rounds" for trainees to share their experiences working with patients who have psychological trauma histories. A pre-curriculum assessment questionnaire examining medical trainees'; knowledge, attitudes, beliefs, and self-reported practices regarding trauma-informed primary care was developed using an expert panel of health psychologists. Content validity was tested and deemed adequate. Medical trainees (n = 23), including medicine, nurse practitioner, and pharmacy residents, completed the pre-curriculum assessment. The assessment included 12 items, each item ranked on a Likert scale from 1 (strongly disagree) to 7 (strongly agree). Average subscale scores were: beliefs: $M = 6.07$, $SD = 0.75$; attitudes: $M = 5.13$, $SD = 0.96$; knowledge: $M = 4.68$, $SD = 1.04$; self-reported practice: $M = 4.42$, $SD = 1.05$. Trainees'; belief scores regarding trauma-informed primary care were significantly higher than their scores on self-reported practice ($t(22) = 7.79$, $p < .001$), knowledge ($t(22) = 6.68$, $p < .001$), and attitudes ($t(22) = 5.68$, $p < .001$). Their scores on attitudes were significantly higher than their scores on practice ($t(22) = 3.13$, $p = .005$). Female trainees ($n = 16$) scored significantly higher ($M = 4.73$, $SD = 1.03$) on self-reported practice than male trainees ($n = 7$, $M = 3.71$, $SD = 0.76$; $F(1,21) = 5.47$, $p = .029$). Post-curriculum questionnaire data will be collected at the end of the training year. The baseline findings suggested that trainees value trauma-informed care, but do not feel that they consistently integrate it into their practice, which the live observation and feedback is intended to target. Next steps will examine post-curriculum measure outcomes and trainee feedback on the curriculum.

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VICARIOUS POST TRAUMATIC GROWTH AMONG CLINICIANS WORKING WITH TERMINALLY ILL PATIENTS

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As clinicians working in hospice and palliative care, we often talk about Post-Traumatic Stress Disorder and how it negatively affects those who undergo trauma. Working with terminally ill patients and their families is difficult emotional work and can be traumatizing. Being an integral member of the patient's care team often means being present at the end-of-life and witnessing traumatizing events such as codes being called, patients suffering in pain or the loss of life. These experiences are stressful, emotionally draining and can lead to high turnover, burnout and compassion fatigue. Supporting patients and their families through the end-of-life can certainly be traumatic for providers, but there is also a positive aspect to trauma that is less often discussed. This poster presentation aims to define posttraumatic growth and the five domains of posttraumatic growth, discuss the current research into posttraumatic growth and vicarious posttraumatic growth among patients and clinicians and explore methods of assessing posttraumatic growth and the limitations of those assessment tools. Posttraumatic growth and its intersection with oncology, grief and spirituality will also briefly be reviewed.

We will discuss three empirically validated measures for assessing posttraumatic growth: the Posttraumatic Growth Inventory, the Benefit Finding Scale and the Stress-Related Growth Scale. In addition, we will discuss how to foster posttraumatic growth among patients with strategies such as therapeutic journaling and emotional expression. Ways to foster posttraumatic growth among clinicians such as organizational factors that facilitate growth will also be reviewed. Finally, this poster will explore the implications that this developing field of research has on our clinical practice as well as strategies for fostering posttraumatic growth in our places of work.

As clinicians, it is important that we obtain a knowledge of the basic concepts of posttraumatic growth as well as identify ways to foster growth. The implications for this research are on both the micro and macro levels. There are ways as clinicians that we can foster growth and reduce the distress of our patients. An awareness of posttraumatic growth as a possibility can help to bring new hope to our patients. In addition, this research demonstrates concrete ways growth can be encouraged among clinicians. Given that this research introduces ideas that may increase retention of clinicians, it is also a cost-saving approach. Hiring and training new staff and investing money into their development is a large monetary commitment and reducing turnover could curb this financial strain.

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ASSOCIATIONS BETWEEN BMI, WEIGHT-RELATED HEALTH BEHAVIORS, ACADEMIC PERFORMANCE, AND COGNITIVE ABILITY

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Background: U.S. childhood obesity rates have tripled since 1970. While childhood obesity has been shown to negatively associate with several measures of academic performance, it is still unclear whether obesity or obesity-related health behaviors associate with objective measures of cognitive ability.

Objective: To determine the relationship between body mass index (BMI), several obesity-related health behaviors and both high school grade point average (GPA) and American College Testing (ACT) scores in a national sample of ACT-tested high school students.

Methods: We recruited a national sample of 9th-12th grade students who took the April 2017 ACT exam to report their height, weight, and weight-related health behavior questions taken from the 2017 Youth Risk Behavior Survey targeting physical activity, sedentary behavior, sleep and dietary intake. Pearson partial correlation coefficients between BMI, health behaviors, GPA, and ACT scores were calculated while controlling for socioeconomic status (parental income), gender, and race/ethnicity.

Results: Based on data from 2,962 students, high school GPA significantly ($p < 0.001$) associated with BMI ($r = -0.13$), weekday TV time ($r = -0.09$), weekday sleep time ($r = 0.07$), weekend sleep time ($r = 0.12$), number of sports teams ($r = 0.08$), soda consumption ($r = -0.13$), fruit consumption ($r = 0.11$), vegetable consumption ($r = 0.10$), and eating breakfast regularly ($r = 0.13$). ACT scores significantly ($p < 0.001$) associated with BMI ($r = -0.13$), days physically active ($r = -0.10$); participation on sports teams ($r = -0.09$), weekday TV time ($r = -0.15$), weekend TV time ($r = -0.08$), video game playing time ($r = 0.08$), weekend sleep time ($r = 0.16$), soda consumption ($r = -0.13$), fruit consumption ($r = 0.10$), and vegetable consumption ($r = 0.11$).

Conclusions: Students who watched less TV, slept more, ate a healthier diet, and had a healthier weight tended to report higher grades and performed better on the ACT exam. School-based programs targeting each of these areas are thus warranted as part of a well-rounded curriculum.

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CITATION AWARD WINNER

A096

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COLLABORATIVE DATA INTERPRETATION AND PLANNING TRAINING FOR COMMUNITY SUBSTANCE USE STAKEHOLDERS AND PROVIDERS IN HAWAII

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BACKGROUND: Data plays an important role in public health, as it provides the information necessary to successfully plan, implement, evaluate, and sustain intervention programs. However, organizations often underutilize data and have a deficit in their capacities for incorporating data. Data interpretation and planning trainings were provided to individuals across the 4 counties of Hawaii who work in the field of substance abuse prevention and treatment as an effort to bridge this gap.

PURPOSE: To evaluate trainings about data interpretation based on locally conducted needs assessments and other data sources, and about planning concepts for counties, coalitions, and other stakeholders.

METHODS: Pre- and post-tests were administered to all participants to assess participants' knowledge of program planning, logic models, epidemiological profile data, capacity building, and cultural competence. Participants also completed a satisfaction survey upon completion of the training program to evaluate the course content, trainers, course materials, and overall satisfaction.

RESULTS: There were 72 participants (69% female; mean age = 44.55 [SD=11.34]). Trainings were delivered at five different sites across all 4 counties of Hawaii. The differences between percentages correct on pre- and post-tests showed a significant improvement ($t(68) = -7.54, p < .001$) from 77.46% (SD=12.39) to 90.14% (SD=10.14). McNemar's test was used to further analyze each question. Participants showed a significant increase in number of participants who answered correctly on questions regarding next steps for the grant ($p < .001$), major issues identified in the needs assessment discussed ($p < .001$), epidemiological statistics ($p < .001$) and components of a logic model ($p < .001$). In addition, most participants (87% or more) were satisfied with the course.

CONCLUSIONS: Participants increased their knowledge of key topic areas and were overall satisfied with the training provided. Multiple participants also expressed interest in additional opportunities for trainings through continued partnerships. Given the popularity and effectiveness of this program, the collaborative trainings should be both continued and expanded.

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COMMUNICATION BETWEEN THE SCIENTIST AND STATISTICIAN DRIVE THE DEVELOPMENT OF A GRANT APPLICATION AND CLINICAL PROTOCOL

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Starting in January 2018, the NIH changed how it accepts clinical trial applications. For example, grant submissions to the NIH for a clinical trial are required to include a clinical protocol synopsis. The consequence of this is that many scientists with no experience writing clinical trial protocols will now be required to compile these complex documents. Writing a clinical trial protocol that is based on a grant application requires collaborative communication between the primary investigator and the study statistician at numerous points along the way. How to convert a grant application into a protocol is described, along with the critical points in the conversion and development process that require this kind of collaborative communication. We also discuss historical trends in basic clinical science research and quantitative analysis, training and background of scientists and statisticians, as well as misuse of statistics.

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IMPROVING TRAINEE SKILLS IN THE CLINICAL ASSESSMENT OF SOCIAL NEEDS BY USING STANDARDIZED ADOLESCENT PATIENTS

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Background: New Institute of Medicine (IOM) and Centers for Medicare & Medicaid Services (CMS) guidelines assert the importance of screening all patients for social needs (e.g. food and housing insecurity), suggesting that health service delivery that is informed by patients' social needs and resources are more likely to facilitate self-management of chronic conditions, reduce health service utilization, and overall health care costs. While health systems implement these guidelines into routine care (i.e. Accountable Health Communities Model), there is a need (gap) to integrate social need screening and related clinical decision-making into curricula or practicum settings at the trainee level.

Purpose: The purpose of this study is to explore culturally and socially appropriate ways for graduate health science students to improve their ability to assess and address social needs during their trainee education using adolescents as standardized patients in a simulation setting. Additionally, it had the goal to further motivate disadvantaged youth to enter health careers through their involvement in the simulation.

Methods: Through an intensive health careers exploration program, adolescents were trained as standardized patient actors by an academic health sciences simulation lab. During an urgent care visit scenario, each youth was given the same simulation script introducing a variety of behavioral health and social need situations. The NP students were naive to the patient's sociocultural context and were not instructed to evaluate for social needs. All dyads were recorded and reviewed by nursing faculty who rated students on various dimensions. All NP students filled out a self-reflection following the encounter.

Results: Nine adolescents from disadvantaged communities and 17 second year NP students participated in the simulation. Analyses underway are using grounded theory to evaluate the footage and self-reflection to provide data for analysis. Preliminarily, we found that some students addressed circumstances of housing instability or difficulty accessing transportation, but most social needs were unaddressed. Students tended to rely on illness-specific details for psychoeducation.

Conclusions: Through a simulated setting and standardized patients who can most authentically represent adolescents, we demonstrated the need for to develop explicit instruction addressing social needs for trainees.

The original project is a collaboration between UCSF School of Nursing, Alameda County Health Systems, Oakland high school health academies, and the OUSD Linked Learning office. Funding for this year's training and analysis are supported by a HRSA grant focusing on the integration of primary care and behavioral health, and funding from Alameda County to increase representation of minority and disadvantaged youth in health professions.

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CITATION AND MERITORIOUS AWARD WINNER

A099

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MEDICAL STUDENT MENTORS: A POTENTIAL NEW MODEL FOR SPECIALIZED ADOLESCENT PATIENT SUPPORT

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Introduction: Peer mentoring and the benefits of social support have been successfully used to promote positive changes for a number of health behaviors. Medical students have been utilized as peer mentors for adolescent and young adult patients with a variety of chronic conditions. Medical students have the unique quality of being integrated into the healthcare system and being a similarly-aged “peer” to the patient. Little research has focused on medical student interest in acting as a mentor for adolescents with chronic disease, or the potential reciprocal benefit this program model could provide for both patient and student. In this study, we examined medical student experiences, interest, and expectations for a mentoring experience working to improve transition outcomes for adolescents with chronic disease. This research is being used to inform the development of such a program.

Methods: 164 medical students (58% female, M age = 25.1, SD = 2.39; 26.2% 1st, 31.3% 2nd, 20.0% 3rd, and 22.5% 4th year medical students) were recruited from Robert Wood Johnson Medical School. Participants completed a survey measuring previous mentoring experience, interest in mentoring adolescents with chronic disease, and expectations for participating in a mentor program to improve transition outcomes for adolescents with chronic disease.

Results: Two-thirds of respondents indicated that they had served as a mentor during medical school, most commonly serving as a mentor for other medical students. Overall, 57% of students reported that they would “definitely” or “probably” be interested in program mentoring a young adult with chronic illness (M = 2.4 on 5-point scale; 1= definitely interested). Students interested in participating thought that a mentoring opportunity would allow them to learn more about chronic disease management (60.2%), establish a relationship with a patient (59.6%), and learn more about patient navigation within the healthcare system after completing the program. Students expressed interest in receiving training about health insurance (51.7%) and disease specific information (51.7%) before participating. Nearly half of the interested sample reported they would be willing to dedicate 4 or more hours per month to their mentee.

Conclusions: This study indicates that medical students are interested in serving as a mentor for adolescents with chronic disease. The results indicate that there is potential reciprocal benefit for medical student education, as well as patient outcomes. The results of this study are being used to guide the development of a medical student mentor program to improve transition outcomes for adolescents with chronic disease.

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PEER HEALTH COACH TRAINING PRACTICUM: EVIDENCE FROM A FLIPPED CLASSROOM

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Purpose: Health coaching is an effective method to assist individuals in gaining motivation to engage in healthy lifestyle behavior changes. We developed a new flipped classroom practicum course designed to offer undergraduate students the opportunity to learn an important skill called motivational interviewing (MI) commonly used in health coaching. The 16-week, 2-credit course (led by four trained, graduate student health coaches) consists of online video lectures, in-class activities, experiential training, and supervised practicum experiences in health coaching. The aim of this study is to evaluate the process, impact, and outcomes of this new health coaching practicum.

Methods: Surveys were administered to all participants, (n = 13; 11 female; average age 21.4 ± 1.8); seven participants consented to provide a recorded MI conversation to evaluate fidelity of the training. Surveys assessed participant satisfaction and impact using 6-point Likert scales and were analyzed descriptively (mean \pm SD). Recordings of MI conversations were independently coded by three of the instructors using the Motivational Interviewing Treatment Integrity (MITI) Coding Manual 4.2.1.

Results: Survey results demonstrated that students felt comfortable (4.9 ± 0.49) and confident (4.7 ± 0.49) using MI. Students reported that they found the course useful, (5.46 ± 0.52) and would most likely use this skill in the future (5.7 ± 0.63). Inter-rater agreement showed high reliability between coders (95% agreement, $p < 0.001$) with average scores being reported. Results from the MITI showed that six of the seven students met the proficiency level for relational components of MI, two of the seven students scored at or above the proficiency level for technical, and two of the seven students met proficiency levels for the percent of complex to simple reflections used.

Conclusions: These preliminary results support the utility of a flipped classroom practicum course designed to teach undergraduate students the skills of MI, however extended practice with the use of MI may be needed for students to meet proficiency levels.

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REACHING ACROSS THE HEALTH DISCIPLINE DIVIDE: ASSESSING STUDENT OUTCOMES FROM AN INTERPROFESSIONAL TRAINING PROGRAM

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Intro: There is an increasing demand for interprofessional education (IPE) to address the healthcare needs of older adults. While there are often barriers to delivering interprofessional healthcare effectively, team decision-making can be improved with targeted education. The current study evaluated outcomes of an IPE training program designed to bolster competency and attitudes toward working on interprofessional teams, specifically among older adults with many cross-disciplinary needs.

Methods: Students (N=45) from multiple health-related disciplines [Pharmacy (N=33), Nursing (N=7), and Nutrition (N=5)] at a midsize northeastern university participated in a three-day Interprofessional Senior Health and Wellness program. Students were taught teamwork principles and provided collaborative screening, educational materials, and referral suggestions to older adults from the community. Students completed the Team Skills Scale (TSS) and the Attitudes Towards Health Care Teams Scale (ATHCTS) once directly before and after the IPE program to assess for perceived skills and attitudes towards interprofessional team care.

Results: Students were primarily women (78%), English speaking (95%) young adults (M=23.4 yrs, SD=5.0). Over 70% were Clinical Doctorate or Master's students, 23% were pursuing an undergraduate degree, and 35% of students entered the program without any prior experience in interprofessional teamwork. Students reported a significant improvement in team skills ($t=-2.32$, $p=.025$). Students also reported significant improvement on 4 of the 17 individual skills items (e.g., "I am able to identify contributions to patient care that other disciplines can offer"). Attitudes scores did not significantly change across the program [Pre: M=83.35 (SD=13.3); Post: M= 87.96 (SD=11.9)], although 3 of 21 individual items significantly declined in the opposite direction than hypothesized (e.g., "In my opinion, developing an interprofessional patient care plan is excessively time consuming").

Discussion: Perceived skill mastery improved overall and most notably on four items. While three attitudes items did trend in the opposite direction than predicted, students entered the program with generally positive attitudes toward IPE that were maintained across the program. Findings from this relatively small sample suggest that students across health disciplines could benefit from IPE trainings to bolster team skills in working with older adults, yet further research is needed to address the complexities of attitudes towards team decision-making.

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VOCATIONAL ORIENTATION WORKSHOPS FOR STRENGTHENING OCCUPATIONAL COMPETENCIES IN YOUTH AT A GERMAN YOUTH EDUCATIONAL CENTER

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Background: During youth, it is important to strengthen occupational competencies in young people for the entry in job life. A major part of this process is to find about which profession matches with one's own skills as a prerequisite for a satisfactory career and a healthy future as an adult. Therefore, a Youth Educational Center covering predominantly one district (Bezirk) of Bavaria, Germany have has implemented a workshop curriculum to this effect with middle school classes over several years.

Purpose: To evaluate vocational orientation workshops implemented at the Youth Educational Center Waldmuenchen with middle school classes in grade 8 since 2012 on learning about one's own skills and developing professional competencies.

Methods: The 5-day workshop consists of different topics. In the first part, youths do different exercises to find out about their skills before they investigate and identify their desired occupation. A presentation about themselves allows them to get feedback about the impression they project, while the team training requires collaboration with the whole class. In a simulation game, youths learn about the job application procedure and the job market prior to a simulated interview. Post-test surveys (1: agree; 2: agree somewhat; 3: disagree somewhat; 4: disagree) were administered to all workshop participants between 2012–2017. The item means were used to track the evaluation over the last few years.

Results: There were 289 workshops (annual $M=48.2$, $SD=8.0$) implemented with 5,358 participants (12–15 years old, annual $M=893.0$, $SD=134.5$). Participants on average agreed that they had learnt about their own strengths and skills ($M=1.4$, $SD=0.2$) as well as about their desired occupation and an alternate occupation ($M=1.5$, $SD=0.2$). In terms of job application process outcomes, participants endorsed that they felt safe in job interviews due to the camp ($M=1.7$, $SD=0.2$) and that they know what to do next for getting an apprenticeship ($M=1.5$, $SD=0.2$). Regarding social skills, participants confirmed that they can work better in a team due to the camp ($M=1.7$, $SD=0.3$) and group cohesion improved ($M=1.8$, $SD=0.4$). No estimates were significantly when compared by year of implementation (all $p>0.5$).

Conclusions: The results indicate that the camp had a positive effect on occupational competencies as well as on figuring out a suitable profession for the participants. This indicates that the program is suitable to strengthen competencies of youths, likely positively affecting future job entry. Further evaluation of the workshops is recommended, especially a longitudinal follow-up of the participants in terms of the choice of apprenticeship/employment, later job satisfaction, as well as longevity in a position and quality of life.

Acknowledgement: We appreciate the Youth Educational Center in Waldmuenchen in Bavaria, Germany, who provided the data set.

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CHARACTERISTICS OF SLEEP IN PERSONS WITH VARYING LEVELS OF HEALTH LITERACY

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Introduction: Health literacy is a measure of how one can interpret new health information, and is related to a variety of health variables including utilization, quality of life, and even mortality. Although factors such as socio-economic status, mood, or education in part explain these relations, our previous work suggest they do not completely. Research on the effects of sleep is not complete, however we do know that sleep is closely related to health. The purpose of these analyses was to explore the relation of health literacy to aspects of sleep in individuals with different levels of health literacy – a relationship that has not been studied previously.

Methods: Using data from a previous study of health literacy in 497 English and Spanish-speaking individuals (n = 245 and 252, respectively) recruited to represent a range of ages (18 to 93; mean 53.1 years) and levels of education (0 to more than 20; mean 12.3 years). Persons were categorized according one of four levels of health literacy: below basic, basic, intermediate, or proficient. Participants also completed the Pittsburgh Sleep Quality Index (PSQI), a widely-used measure of sleep quality that includes questions assessing various aspects of sleep. Mood was determined based on the Center for Epidemiological Studies Depression Scale (CES-D). The relation of group membership to sleep characteristics was explored using multivariate analysis of covariance (MANCOVA), controlling for age, gender, race, language, and mood.

Results: Analyses showed overall between group differences on PSQI items (F 13, 393 = 31.07, p<0.001). Between group differences were found for PSQI items sleep duration (F 8, 405 = 10.65, p<0.001), disturbances in sleep (F 8, 405 = 18.43, p < 0.001), sleep latency (F 8, 405 = 9.49, p < 0.001), and sleep efficiency (F 8,405, p <0.001). Evaluation of between group differences via post-hoc tests however, revealed few significant differences.

Discussion: The results from the study support the idea that health literacy may be related to sleep. Because sleep plays an important role in health, it is worthwhile to assess the relationship between health literacy and sleep. It could be that those with lower health literacy levels are not aware of the benefits of sleep. On the contrary it could also be thought that poor sleep quality could affect the ability of participants to read and analyze new medical information.

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DOES PHYSICIAN GENDER PLAY A ROLE IN COLLEGE STUDENTS' HUMAN PAPILLOMAVIRUS (HPV) VACCINATION DECISIONS?

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HPV prevalence is high on college campuses, yet the majority of students are unvaccinated. Physician recommendation is the most influential determinant of HPV vaccination, however little research has explored how physician characteristics (e.g., gender) affect HPV vaccination decisions (Holman et al., 2014). Some research indicates that gender concordance is associated with patient message acceptance (Schiber et al., 2014). Competing research indicates that both female and male patients are more likely to receive preventative services (e.g., cancer screenings) from female physicians (Krähenmann-Müller et al., 2014). We experimentally investigated whether *physician gender concordance* or *female physician gender* was associated with college students'; adherence to physician HPV recommendations.

College students (N = 227, 67% male, 69% White, $M_{age} = 19.47$) who had not received the HPV vaccine completed an online module where they were randomly assigned to envision a physician appointment with a male or female avatar physician photo. Participants read identical physician advice regarding HPV risks, vaccine efficacy and availability. Participants then completed a survey on perceived vulnerability for contracting HPV, HPV vaccine intention, and general adherence to physician recommendations.

All ANOVAs controlled for participant gender. No significant differences emerged for participant/physician gender concordance in perceived vulnerability, vaccine intention, or adherence ($ps > .12$). For the female physician effect, there were no significant differences in perceived vulnerability or vaccine intention ($ps > .77$), but significant results did emerge for adherence to physician recommendations [$F(1, 222) = 5.14, p = .03$, scale 1–9]. Participants randomly assigned to the female physician reported greater adherence to physician recommendations ($M = 7.15, SD = 1.58$) than participants assigned to the male physician ($M = 6.69, SD = 1.66$).

These results provide the first known experimental head-to-head comparison of *physician gender concordance* and *female physician gender* effects. Results indicate that female physicians may induce greater general adherence, but this may not apply to HPV-specific medical suggestions. Future studies should explore in vivo physician gender manipulation and whether the *female physician effect* applies to general and HPV-specific adherence in naturalistic settings. With that said, these data suggest that HPV vaccination decisions may be uninfluenced by physician gender.

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EFFECTS OF ATTITUDE-DISCORDANT NEWS ON SUBSEQUENT ONLINE SELECTIVE EXPOSURE AMONG PRO- AND ANTI-VACCINATION INDIVIDUALS

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Rationale. The Internet allows individuals to pursue congenial content and avoid non-congenial content (i.e., “selective exposure”). The internet may also allow vaccine hesitant individuals to seek content affirming vaccine hesitancy. Despite evidence for selective exposure, questions remain about its proximal determinants. In this study, we ask whether exposing partisans to news about vaccination prompts subsequent selective exposure, and we examine affective response and bias perception as drivers of selective exposure.

Methods. 333 individuals with strong opinions on childhood vaccination were recruited via MTurk and online interest groups and randomized to one of three stimuli (news articles that were concordant or discordant with participants’ vaccination positions, or neutral). After reporting affective responses and bias perceptions, participants completed an online news-browsing task, capturing: 1) proportion of selections concordant with their positions, and 2) proportion of time on concordant selections.

Results. Results showed a significant effect of stimulus on affect, $F(2,292) = 6.71$, $p = .001$, with those exposed to concordant articles reporting less negative affect than those exposed to neutral or discordant articles. Results also showed a significant effect of stimulus on perceived bias, $F(2,298) = 45.935$, $p < .001$, with those exposed to concordant articles perceiving less bias toward their positions than those exposed to discordant or neutral articles. Those reading neutral articles perceived less bias than those reading discordant ones.

Results from the news-browsing task revealed a significant effect of stimulus on proportion of subsequent concordant selections, $F(2,229) = 3.354$, $p = .037$, with those exposed to concordant stimuli selecting a lower proportion of concordant articles than those exposed to neutral or discordant stimuli. Stimulus also affected distribution of reading time, $F(2,229) = 4.170$, $p = .017$, with those exposed to concordant stimuli spending less time on concordant articles than those exposed to discordant or neutral stimuli.

Mediation analysis found that stimulus affected proportion of concordant selections via negative affect [indirect effect: $M (SE) = -.0176 (.0097)$; 95% BCa $CI = [-0.040, -0.002]$] but not via bias perceptions. Likewise, we found that stimulus affected the time spent on concordant selections via negative affect [indirect effect: $M (SE) = -.0176(.0108)$; 95% BCa $CI = [-0.042, -0.001]$] but not via bias perceptions.

Discussion. Online “selective exposure” risks isolating individuals from accurate and comprehensive health information. Our findings suggest that exposing partisans to counter-attitudinal health news may have unintended consequences, driven by negative affect, wherein partisans engage in compensatory information seeking that confirms their original positions.

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MOVIN’ FOR LIFE: SOCIAL MARKETING TO PROMOTE A COMMUNITY-BASED HEALTH PROMOTION PROGRAM IN NEW ORLEANS

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Background: *Movin’ for LIFE* (Lasting Improvements for Fitness and Energy) is a multi-level, community-based program in New Orleans 9th Ward - an underserved, predominantly black neighborhood - that coordinates, sponsors and promotes free health promotion activities for residents related to physical activity and healthy eating. This study’s purpose is to evaluate a social marketing campaign implemented in summer 2017 for two *Movin’ for LIFE* health promotion activities, a Family Health Fair and 5K Run/Walk.

Methods: The campaign utilized a range of strategies to reach potential participants including print and online ads with news media, social media ads, outdoor ads, printed flyers, and word of mouth. Data for message reach was collected using Google Analytics, Facebook and Twitter analytics, news media readership and impressions, outdoor advertising company estimates for impressions based on traffic counts, and number of flyers distributed via two part-time Community Health Workers to outlets in the community.

Results: The campaign resulted in 11,000 flyers distributed to more than 80 neighborhood businesses, churches and nonprofits. Two months of ads on 3 billboards generated 1.09 million impressions, one month of bus shelter ads generated 2.61 million impressions, and 1 month of ads on 8 bus exteriors generated 9.74 million impressions. 2,339 users accessed the program website during the 3-month campaign, compared to the total 3,395 users that visited the website during its 1-year lifespan. Print and digital ads with news media outlets resulted in 918,000 impressions. Facebook ads reached 12,520 people and Twitter ads generated 52,810 impressions. The Family Health Fair had 156 participants. A total of 280 people registered for the 5K Run/Walk, and an estimated 250 participated.

Conclusions: Best practices recommend utilizing a variety of marketing strategies to saturate audiences and reinforce messages through repetition and multiple exposures. Our study shows that using multiple strategies is a viable method for recruiting participants for health promotion activities.

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MULTIPLE SCLEROSIS (MS) HEALTH BELIEFS AND THEIR ASSOCIATION WITH DEPRESSION AND SUICIDALITY IN PERSONS WITH MS

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Background. Persons with multiple sclerosis (MS) have increased prevalence of depression and suicidality compared to the general population. Lack of MS health literacy, or specifically, endorsement of false beliefs about the disease may contribute to poorer emotional functioning. The purpose of this study was to examine MS health beliefs, depression, and suicidality.

Methods. The present survey study examined depression using the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983), suicidality using a single item of suicidal thoughts, and beliefs about common MS facts/myths using an author derived 14-item measure. The internet-based sample consisted of 212 mostly White (77.8%), female (81.1%) adults ($M_{age} = 46.38$, $SD = 11.36$) living in the US (82.1%) and diagnosed with MS (80.2% relapse-remitting).

Results. Bivariate correlations were used to examine the relationship between strength of endorsement of MS false beliefs and depression and suicidality. Total endorsement of false belief items was significantly correlated to both depression ($r = .47$, $p = .00$) and suicidality ($r = .26$, $p = .00$). At the item level, the MS health beliefs most strongly associated with depression were “People with MS cannot keep working” ($r = .42$, $p = .00$), “Exercise makes MS worse” ($r = .40$, $p = .00$), “MS is a death sentence” ($r = .34$, $p = .00$), “People with MS cannot have a satisfying sex life” ($r = .34$, $p = .00$), and “If you have MS, you will end up in a wheelchair” ($r = .30$, $p = .00$). At the item level, the MS health beliefs most strongly associated with suicidality were “MS is a death sentence” ($r = .27$, $p = .00$), “If you have MS, you will end up in a wheelchair” ($r = .24$, $p = .00$), “People with MS cannot keep working” ($r = .22$, $p = .00$), “People with MS cannot have a satisfying sex life” ($r = .22$, $p = .00$), and “Physicians who suggest patients see a mental health provider are telling them that they are ‘crazy’; or that ‘it’s all in their head’;” ($r = .21$, $p = .00$).

Conclusion. The current study suggests that beliefs about MS disease and course are associated with depression and suicidality. Similar sets of MS beliefs, mostly quality of life driven, were linked to depression and suicidality; however, depression was most strongly connected to beliefs about ability to work whereas suicidality was most strongly connected to beliefs about MS being a death sentence. Given these findings, health care providers may wish to carefully assess patients’ understanding of MS, especially when psychological distress is part of the clinical presentation. Further, health literacy information should address MS health beliefs directly and dispel myths that may be related to poorer emotional functioning, and consequently, quality of life.

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OPTIMISTIC BIAS FOR NEGATIVE PROGNOSTIC INFORMATION PREDICTS HYPOTHETICAL CANINE B-CELL LYMPHOMA TREATMENT DECISION MAKING

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Background: The majority of patients in the ICU do not have an advance health care directive, as a result surrogate decision makers are left with the burden of interpreting prognoses and making end-of-life decisions. Surrogates for critically ill patients tend to be optimistically biased when interpreting poor prognoses. With the increasing importance of companion animals in the family and advanced veterinary care, more individuals will serve as surrogate decision makers for a critically-ill companion animal. Despite this, very little attention has been paid to surrogate decision making with regard to veterinary medicine.

Objective: This study examined this bias in a hypothetical veterinary medical context and whether it is affected by the framing of prognostic information in terms of “dying” vs. “surviving;” and if it predicts hypothetical canine B-cell lymphoma treatment decisions, along with comfort received from and attachment to a companion animal, the companion animal’s prognosis (good vs. poor), owner’s insurance status (has insurance vs. has no insurance), and veterinarian recommendation (toward treatment with a full protocol of chemotherapy vs. euthanasia vs. no recommendation), after controlling for factors that may influence such a decision, such as dispositional optimism, personality traits, and spirituality/religiousness.

Methods: 300 undergraduates interpreted hypothetical prognoses and made treatment decisions for their dog with a hypothetical diagnosis of canine B-cell lymphoma.

Results: Participants interpreted prognostic statements in an optimistically biased manner (p ’s < .001). When the prognosis indicated a *low risk of dying* (5% and 10%), framing in terms of *dying* resulted in significantly *lower* perceived chance of survival (p ’s < .001). However, when the prognosis indicated a *high risk of dying* (95%), framing in terms of *dying* resulted in significantly *higher* perceived chance of survival ($p < .05$). Furthermore, the greater the amount of optimistic bias for prognoses, greater attachment to and less comfort received from the dog, and a veterinarian recommendation towards a full protocol of chemotherapy or no recommendation for a particular treatment, predicted a greater likelihood of approving some form of B-cell lymphoma treatment over euthanasia ($p < .001$).

Conclusions: These results suggest that veterinarians should be cognizant of the optimistic bias for poor prognoses that they may encounter when delivering poor prognoses. This bias may be exacerbated in owners who receive a greater amount of comfort from their animals and are more attached to their animals. Further, greater optimistic bias is associated with a tendency to approve some form of treatment over euthanasia.

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THE DEPARTMENT OF DEFENSE COMPREHENSIVE HEARING HEALTH PROGRAM: A PILOT STUDY

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The World Health Organization estimates that 700 million to 1 billion people worldwide have a hearing loss. For Fiscal Year 2016, the Department of Veterans Affairs reported that 1.6 million and 1.1 million Veterans received disability compensation for tinnitus and hearing loss, respectively. The Department of Defense Hearing Center of Excellence (HCE) created a Comprehensive Hearing Health Program (CHHP) to reduce the incidence of military hearing injury through Education, Protection and Monitoring. The Education component aims to reduce hearing loss incidence among Service Members (SMs) through patient education sessions during audiology appointments. To assess the impact of the sessions, HCE designed a study with a three-group, quasi-experimental design to measure SMs' knowledge, attitudes, beliefs, and behaviors (KABB) regarding hearing loss before, immediately and 6 months post-education session. Questions rating the educational experience were included.

Baseline and post-surveys were administered at three participating military installations. The preliminary baseline data (N=92 of total study N=432) shows the overall self-reported prevalence of hearing loss was 30%, with the Air Force having the lowest (8%) and the Army having the highest at 50% ($p < 0.01$). Seventy percent of Army and Navy subjects reported wearing hearing protection on the job at least 75% of the time, and 48% of Air Force subjects reported doing so ($p < 0.01$). Over half of the Army and Navy respondents reported that their supervisors remind them to wear their hearing protectors at least 75% of the time, and 36% of Air Force subjects reported similarly. Final study data, including available 6 month follow-up questionnaire responses, will be presented to demonstrate effectiveness of these hearing health promotion efforts on the KABB of SMs across all branches of the military.

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THE EFFECT OF SEVERITY OF PROGNOSIS AND FRAMING ON AN OPTIMISTIC BIAS FOR NON-NUMERICAL PROGNOSSES IN THE VETERINARY SETTING

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Background: Physicians often report prognoses in non-numerical format which are subject to an optimistically biased appraisal by surrogate decision makers when the prognosis is poor which has implications in EOL decision making. Veterinarians also report non-numerical prognoses, the effect of which has not been previously examined. Owners of companion animals are inherently surrogate decisions makers and may be subject to the same optimistic bias.

Objective: To determine how commonly used non-numerical statements are interpreted numerically and if there was an effect of severity of prognosis and framing on an optimistic bias for non-numerical prognoses in a sample of dog owners.

Methods: 300 participants interpreted 14 non-numerical prognostic statements about their dog with varying levels of risk framed in terms of dying or surviving. They indicated what they believed the likelihood of survival to be, on a scale from 0% to 100%.

Results: Poor prognostic statements were compared to good prognostic statements based on the distance from their respective end-points (0% and 100% chance of surviving). "Your dog will definitely not survive," the most negative prognostic statement, was interpreted significantly more optimistically ($M = 17.94\%$), in terms of distance from its reference point, than "Your dog will definitely survive" the most positive prognostic statement ($M = 94.83\%$), $t(299) = 10.44$, $p < .001$. Overall, poor prognostic statements were interpreted in a significantly more optimistically biased way than their same framed, good prognostic counterparts, p 's $< .001$. A 2x2 completely within-group ANOVA was conducted to examine the main and interactive effects of framing (in terms of dying vs surviving) and prognostic outcome (good vs poor) in response to the statements "It is very likely that your dog will die" ($M = 24.49\%$), "It is very unlikely that your dog will die" ($M = 88.55\%$), "It is very likely that your dog will survive" ($M = 89.84\%$), and "It is very unlikely that your dog will survive" ($M = 21.69\%$). There was a main effect of framing $F(1, 299) = 6.81$, $p < .01$, indicating that prognoses with the same chance of survival, were more likely to be interpreted in an optimistically biased manner when framed in a more threatening way (in terms of dying vs surviving). There was a main effect of prognosis, $F(1, 299) = 101.31$, $p < .001$, indicating that poor prognoses are more likely to be interpreted in an optimistically biased manner than good prognoses. There was no interaction of framing and prognostic outcome $F(1, 299) = 1.04$, $p = .31$.

Conclusions: Veterinarians, like physicians, should be aware that when communicating non-numerical poor prognoses they are likely to be interpreted in an optimistically biased way, which may be exacerbated when the prognoses are framed in a more threatening manner.

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6:30 PM-7:30 PM

ARE PATIENTS EXPECTING ENOUGH FROM THEIR PROVIDERS?

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Patient expectations directly impact how satisfied patients are with their care. If the care meets or exceeds expectations, patients tend to be more satisfied with their experience (Jackson, 2001). The Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey measures patients' actual experience with the healthcare system. The highest quality of care, as defined by the CAHPS, is when experiences that *should* happen (e.g., clear communication) *always* happen. We compared ratings of actual experiences with how often people *expect* to have these experiences when seeing their primary care provider. We used the national CAHPS Database to assess average ratings of actual experiences and compared these to the expectations of a random sample of 1,010 US adults from Ipsos's online panel.

Chi-Square tests were conducted to compare the CAHPS data with the expectations data. Across all categories, participants had significantly lower expectations for providers as compared to what patients report actually experiencing (all $ps < .001$). Participants had the lowest expectations for getting timely appointments for routine care ($\chi^2=605.9$) and getting enough time with the provider ($\chi^2=653.8$) as compared to actual experience. Their expectations and experience aligned the most for talking about prescription medications ($\chi^2=36.69$), the provider knowing the patients'; medical information ($\chi^2=101.8$), and following up with test results ($\chi^2=107.4$).

Logistic regression analyses were also conducted to estimate the adjusted odds ratios of expectations for demographic characteristics. Sex, age, race, education, income, and health literacy were all included as independent variables in the model. High health literacy was associated with higher odds of always expecting providers to be respectful (AOR=2.7), to spend enough time with the patient (AOR=2.0), to talk about medication (AOR=1.4), to know the patient's medical history (AOR=1.8), to listen carefully (AOR=2.4), to explain things clearly (AOR=2.7), to follow-up on test results (AOR=2.2), and to provide appointments for urgent care as soon as needed (AOR=1.5) as compared to low health literacy (all $ps < .05$). Women and older adults also had higher odds of always expecting more from providers than males and younger adults.

Overall, the results suggest that people may have inappropriately low expectations for primary care providers, especially men, younger adults, and those with low health literacy. Implications will be discussed.

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BEYOND FATALISM: NUTRITION INFORMATION OVERLOAD AND SOURCES OF CONFUSION AMONG BICULTURAL MEXICAN AMERICAN WOMEN

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Background. Individuals who hold fatalistic beliefs about disease – that disease is predetermined and death is inevitable upon diagnosis – have lower rates of cancer screening, and are less likely to engage in healthy behaviors to reduce cancer risk. Latino and other minority populations are more likely to hold fatalistic beliefs than Non-Latino Whites, potentially contributing to health disparities. However, the mechanisms linking fatalism to cancer prevention behaviors are poorly understood. Recent research considers exposure to information from the media to be one cause for fatalistic beliefs.

Purpose. The aim of this study was to examine fatalistic beliefs about diet and disease risk and sources for nutrition information among bicultural, English-speaking Latinas who face increased risk from dietary acculturation.

Methods. Mixed-methods (semi-structured interview, survey) with bicultural Mexican American women ages 18–29 (N=24) in rural California.

Results. Contrary to previous studies, this sample of bicultural Latinas did not endorse fatalistic beliefs, demonstrating a clear understanding of the link between diet and risk of certain diseases. Participants noted that sugar was a major cause of diabetes; obesity and heart disease were similarly understood to be a function of diet and within one's control. Cancer risk was not associated with diet. Despite articulating the link between diet and disease, participants expressed sentiments capturing information overload about diet and nutrition advice that comes from multiple sources and channels, including mass media, school, and family and friends. Some participants expressed confusion due to conflicting messaging from multiple sources. In terms of mixed messaging, participants distinguished between nutrition information available and nutrition information needed, and expressed a desire for deeper knowledge and specific skills.

Conclusion. This study found minimal support for fatalistic beliefs among a sample of young adult Mexican American women, but considerable confusion and concern about the nature of public and interpersonal communication about diet and nutrition. Opportunities for nutrition communication to raise awareness of cancer and diet risks among this growing, high-risk population, and more broadly, opportunities to improve the clarity of communication about nutrition science and dietary recommendations, are discussed.

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BRIDGING THE GAP: PATIENT ACCESS TO MEDICAL INFORMATION DURING HOSPITALIZATION

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Background: Patient access to information during hospitalization supports informed decision making and reflects a patient's right to partner in their own care across the continuum of care. Patients with a chronic disease are often faced with bridging the gap between home, hospital, and providers. The purpose of this qualitative study was to determine patient perceptions about barriers and facilitators to information access and participation in provider-patient information exchange during hospitalization.

Methods: After IRB approval, data was collected through an online survey and two focus groups. Study inclusion criteria: over 18, living in the US, chronic disease diagnosis, and have had an inpatient hospitalization after initial diagnosis. Two focus groups were held to gather the perspectives of Spanish speaking Hispanic patients. Social media snowball sampling was used to recruit online survey participants. This survey included both limited choice and open-ended questions. The open-ended responses were coded using qualitative content analysis.

Results: The survey participants (n=34) were predominantly female (88%), Caucasian (91%), highly educated (29% some college, 32% college graduates, and 32% some graduate school or an advanced degree), and ranged in age from 20–76 ($\mu=48$; $SD=16.87$). Hospitals in all four US geographical regions and urban, rural, and suburban settings were represented. The survey participants identified multiple provider behaviors that inhibited patient participation in medical rounds and bedside shift change handoff. The majority of this group expressed a desire to “know everything” and frustration about access to medical information. This group used multiple paper and electronic methods to keep track of their medical information. The all-female, Hispanic, focus group participants (n=6) were recruited locally and ranged in age from 47–66 ($\mu=55$, $SD=7.11$) and had a primary (5) or high school (1) education. The focus group participants expressed satisfaction with provider communication during hospitalization, including access to translation services, and a preference for written discharge instructions.

Discussion: Findings revealed a wide variation in the level of participation and type of information desired by patients during hospitalization. Future research is needed to identify methods to determine individual patient information desires and level of participation, identify provider behaviors that encourage provider-patient information exchange, and develop interventions that support the level of participation and information desired by patients during hospitalization.

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COMMUNICATION OF RECOMMENDATIONS TO DISPOSE OF UNUSED OPIOIDS BY HEALTHCARE PROVIDERS AND OTHER STAKEHOLDERS IN THE NEWS MEDIA

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Background:

Opioid use and abuse has reached epidemic status. Proper disposal of unused opioids may be an avenue for upstream prevention of abuse, addiction, and potentially fatal overdose. The U.S. Food and Drug Administration (FDA) recommends that certain medications that can be harmful or fatal with one dose (e.g., opioids such as oxycodone hydrochloride and fentanyl) should be disposed of quickly through a take-back program. If this option is not readily available “it is recommended that these medicines be flushed down the sink or toilet as soon as they are no longer needed.” Toilet disposal may not be perceived as an option since previous research has suggested that pharmaceuticals can negatively impact the aquatic environment. Yet, recent research has found negligible eco-toxicological and human health risk for the majority of the pharmaceuticals recommended by the FDA for toilet disposal.

Aim: To understand the communication of opioid disposal recommendations in the news media. Specifically, to evaluate when take-back programs are discussed, if toilet disposal is also presented as a recommendation for disposing of certain opioid medications, per FDA recommendations.

Methods: This study conducted a content analysis of 350 U.S. newspaper articles published during 1/1/2014–6/30/2017. The search strategy included the terms “opioid, opiate, or painkiller” and “take-back” using the LexisNexis database. Articles were coded for the following: the presentation of and recommendation for opioid disposal practices (take-back programs and toilet disposal) and other strategies to prevent misuse of opioids. The person or entity responsible for the statement was also captured.

Results: Results regarding the presentation of take-back programs and toilet disposal by various stakeholders will be presented. Preliminary results suggest toilet disposal is infrequently recommended when take-back programs are presented. Other themes identified in the news media as key strategies to mitigate the abuse of opioids include prescription drug monitoring programs and recommendations to modify prescribing practices.

Discussion: This is the first study to evaluate the communication of FDA opioid disposal recommendations by the news media. Implications for improving the communication of FDA opioid disposal guidelines by healthcare providers, government employees, and other stakeholders in the news media will be discussed.

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EXAMINING THE ASSOCIATION BETWEEN HEALTH LITERACY AND HEALTH INFORMATION SEEKING

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Purpose: Health information from nonprofessional sources, especially that available on the Internet, has been criticized for being of poor quality because it lacks peer review or regulation. Misleading information could result in negative outcomes such as delayed health care. The purpose of our study was to test whether people with lower health literacy levels use and trust lower quality health information sources. We reasoned this would be the case if people with lower health literacy are less likely to evaluate the quality of health information sources than those with higher health literacy.

Methods: Six hundred participants (50% non-metro residents) from a GfK panel completed an online survey. We assessed their levels of health literacy using the Newest Vital Sign (continuous scores ranged from 0–6), the sources from which they obtained health information (dichotomous variable), and the extent to which they trusted the health information from these sources (ordinal variables). We performed binary and ordered logistic regressions, controlling for demographic characteristics (race/ethnicity, age, gender, education, income, and metro/non-metro status), to test if lower health literacy was associated with higher use and trust for health information from lower quality sources.

Results: Lower health literacy was associated with more use of social media (OR = 1.27, $p = .006$) and blogs (OR = 1.23, $p = .048$) but less use of online search engines (OR = 0.85, $p = .023$) and medical websites (OR = 0.83, $p = .021$) for health information. Lower health literacy was also associated with more trust in health information from social media (OR = 1.23, $p = .004$), blogs (OR = 1.20, $p = .016$), religious organizations (OR = 1.18, $p = .015$), pharmaceutical companies (OR = 1.23, $p = .002$), and other companies (OR = 1.20, $p = .016$), but less trust in health information from health professionals including specialist doctors (OR = 0.87, $p = .046$) and dentists (OR = 0.85, $p = .024$).

Discussion: People with lower health literacy were more likely than their higher health literacy counterparts to use and trust potentially low quality health information from nonprofessional or non-evidence-based sources. When designing messages and other interventions for people with lower health literacy, it may be important to promote media literacy strategies for identifying professional health information sources, critically analyzing the quality of health information, and differentiating low quality from high quality sources. Results also indicate that social media could be an effective health education channel to reach people with lower health literacy levels.

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HEALTH AND APPEARANCE SMOKING MESSAGES ON WORRY, PERCEIVED RISK, AND MOTIVATION TO QUIT

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One approach to motivate health behavior change is highlighting consequences of harmful health behaviors via communications to enhance perceptions of risk. This approach typically focuses on highlighting health consequences of harmful health behaviors; however, a small, but growing body of literature provides evidence for the utility of highlighting appearance consequences of harmful health behaviors to motivate behavior change. The purpose of the current study was two-fold: 1) To compare health and appearance messages on the degree to which they elicit perceived risk and worry about smoking relative to a control and 2) to directly compare perceived risk and worry as predictors of motivation to quit. Smokers (N=107) were randomly assigned to one of three conditions in which they were prompted via a smartphone application to read messages related to the health consequences, the appearance consequences of smoking, or control messages about daily hassles six times daily. At the end of two weeks, participants completed assessments of perceived risk and worry about health and appearance consequences of smoking, and motivation to quit. Controlling for pre-test smoking and perceived statement relevance, compared to control, smokers exposed to appearance, but not health messages, reported greater health worry ($p=.01$), perceived health risk ($p=.01$), perceived appearance risk ($p=.001$), and motivation to quit ($p=.002$). Further analysis showed that both risk perceptions and worry about health significantly independently mediated the relationship between message type and motivation to quit. However, in a multi-mediator model, only worry about health remained a significant mediator (indirect $b = 2.47$, CI: .62–3.39). These findings suggest that the effect of messages about health behaviors on motivation may be because of the emotional experience elicited from the messages. Further, appearance-related consequences may be an important target to enhance motivation for health-protective action.

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ILLNESS PERCEPTIONS AND ACUTE HOSPITAL VISITS IN PATIENTS WITH CHRONIC ILLNESS

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Background/Purpose: Chronic illness accounts for 80% of hospitalizations in adults. The purpose of this study is to determine whether number of emergency room and hospital visits differ according to how heart failure and chronic kidney disease (CKD) patients understand their illness.

Framework: We used the Common Sense Model, which proposes that people develop mental models of health conditions (illness perceptions) that drive their treatment goals and health behaviors.

Methods: A cross-sectional design was used. Patients from heart failure and kidney disease clinics at a Midwestern medical center were recruited. Participants completed the Revised Illness Perception Questionnaire (IPQ-R) and questions about number of emergency room visits and hospitalizations in the last year. The IPQ-R (5-point Likert scale) has seven subscales reflecting perceptions about disease timeline, consequences, personal control, treatment control, understanding of the illness (coherence), stability of disease pattern (cyclical), and emotions. T-tests were used to examine differences in IPQ-R subscale scores according to presence/absence of past-year emergency room visits and hospitalizations.

Results: Participants include 118 adults with heart failure or CKD (mean age 64.2 years, 47% male, 73% Black). In the last year, 54% of the sample reported at least one emergency room visit and 42% reported at least one hospitalization. IPQ-R subscale means were generally above the scale midpoint (3.4 to 3.7), indicating perceptions that the disease is chronic, has many consequences, is under personal control, can be controlled by treatment, and is well understood. The emotions and cyclical patterns subscales were neutral (3.0). Those who reported at least one emergency room visit in the past year perceived a lower level of treatment control over their illness than those who did not (3.37 vs 3.63, $p=0.028$). Those who reported at least one hospitalization in the past year perceived more consequences (3.69 vs 3.24, $p=0.0006$) and a more cyclical illness pattern than those who did not (3.21 vs 2.87, $p=0.023$). No differences were found for any other IPQ-R subscale.

Conclusions: Perceiving many consequences, poor treatment control, and a cyclical illness pattern is associated with negative health outcomes. As potential harbingers of negative outcomes, health assessments should include these factors.

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IN THEIR OWN WORDS: HOW ADOLESCENTS DEFINE HEALTH LITERACY

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Background: Health literacy (HL) is a relatively new concept with Ratzan and Parker (2000) defining it as the ability to obtain, process, and understand health information. Nutbeam (2000, 2008) further divided HL into functional, communicative, and critical HL. Adolescence is marked by poor impulse control and increased sensation-seeking, yet it is at this phase in development that individuals are expected to navigate autonomy including assuming increasing responsibility for their health. Given the prevalence of unhealthy behaviors in adolescents, and that HL is implicated in health behaviors in adults, we are interested in how HL influences adolescents' health behavior decision-making. To better understand this relationship, we explored adolescents' definition of HL and their perceptions of the HL/health behaviors relationship.

Method: We conducted three focus groups with adolescents ($n=21$, 86% female, 33% White, Mean age =15.57 years). Adolescents completed the Newest Vital Sign (NVS) and a demographic questionnaire. Adolescents were asked (1) to define HL, health risk behaviors, and preventive health; and (2) explain the health risk behaviors/HL and preventive health/HL relationships. Responses were content-analyzed independently by two raters. Disagreements about themes were discussed until consensus was achieved.

Results: The average NVS score was 3.86 ($SD=1.61$), 42% of adolescents had low to limited functional HL ($NVS=0-3$). Adolescents explained that HL included reading nutrition and/or prescription labels, understanding health/health terms, and finding health information. However, some adolescents also described HL as learning about the human body and "a profession like English literature but for health terms." They described preventive health as taking steps to prevent a health issue or disease and health risk behaviors as engaging in behaviors that one knows is bad for one's health. Regarding the HL/preventive health connections, adolescents discussed that the more they knew about behaviors and impact on disease, the more likely they were to engage in prevention. Adolescents also discussed that HL allowed for them to communicate with adults and doctors about prevention (e.g., sexual health). Regarding health risk behaviors, adolescents reported that HL allowed for them to learn about the risks of behaviors on their own and the more they learned on their own, the less they ignored what "parents say" about risk behaviors.

Discussion: Adolescents have a rudimentary understanding of what constitutes HL. Some of their perceptions of how HL is related to health behaviors are consistent with the adult literature. However, some of their perceptions are specific to their developmental level and warrant further investigation. Specifically, HL may likely serve as a protective factor for health risk behaviors in adolescents.

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INDIVIDUALISM AND HIERARCHISM ARE ASSOCIATED WITH LOWER TRUST IN GOVERNMENT HEALTH INFORMATION

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Purpose: In the U.S., trust in government has been experiencing periods of decline since the mid-1960s. Trust in government health information sources has likely been similarly impacted. The purpose of this study was to identify characteristics of individuals with low trust in government health information to inform messaging for this group. People tend to vary on the extent to which they favor freedom of action for individuals and limiting government's involvement in people's lives (individualism) and in their belief in the value of hierarchical social structures (hierarchy). We hypothesized that people who were more individualistic or hierarchical would be less likely to trust government health information.

Methods: Six hundred participants from a GfK panel (50% non-metro residents) answered Kahan's worldview questionnaire (range=1-4) assessing high individualism/low collectivism and high hierarchy/low egalitarianism and indicated the extent to which they trusted government health information. We tested if individualism and hierarchy were associated with distrust in health information from government sources, controlling for health literacy levels and demographic characteristics (race/ethnicity, age, gender, education, income, and metro/non-metro status) using ordered logistic regressions.

Results: Mean individualism was 2.79 ($SD=0.56$) and mean hierarchy was 2.36 ($SD=0.74$); they were also associated ($r=0.45$, $p<.001$). Compared to people who were more collectivistic, those who were more individualistic were less likely to trust the health information from local health departments ($OR=0.50$, $p<.001$) and federal health organizations ($OR=0.45$, $p<.001$). Compared to people who were more egalitarian, those who believed more in hierarchy were less likely to trust the information from local health departments ($OR=0.63$, $p<.001$) and federal health organizations ($OR=0.59$, $p<.001$). When entering individualism and hierarchy simultaneously, the association between individualism and trust in government health information remained ($OR_{local\ health\ departments}=0.57$, $p=.007$; $OR_{federal\ health\ organizations}=0.51$, $p=.001$), but the association between hierarchy and trust in government health information became non-significant.

Discussion: Both individualism and hierarchy beliefs may undermine trust in government health information, although associations for hierarchy may be largely due to individualism and hierarchy having been associated in our sample. When trying to reach an audience who distrust government sources, it may be helpful to test message credibility with this group or provide strong counter-arguments to beliefs about the untrustworthiness of government sources. Enhancing transparency and interaction between government and individuals on public health issues could also help build trust in government.

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PARENT ATTITUDES, PROVIDER COMMUNICATION, AND ADHERENCE TO PEDIATRIC CLINICAL PRACTICE GUIDELINES

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Background: The American Academy of Pediatrics recommends many child health and safety policies to guide parents and pediatric healthcare providers (HCPs). However, parents' adherence to these guidelines remains lower than expected. Information provided by a trusted HCP can increase adherence to some guidelines. Research has not yet explored the complex relationship between parents'; attitudes towards guidelines, HCP communication, and the impact on adherence to a broad range of child safety policy recommendations.

Methods: Using Amazon Mechanical Turk for recruitment, we administered a survey to parents of children under age 6. Parents were asked to answer about their oldest child under 6 if they had more than one. Based on the theory of planned behavior, parents responded to items about attitudes toward their child'; HCP and toward nine pediatric health and safety guidelines, self-efficacy for following guidelines, communication with HCPs about guidelines (yes/no), and adherence to each guideline. Attitudes and adherence to policies focused on car seat/booster seat use, infant safe sleep practices, routine sunscreen use, gun safety, furniture anchoring, large trampoline use, influenza and routine vaccinations, and newborn Vitamin K injections.

Results: 256 primary caregivers participated, whom were mostly married (72%), White (81%) and female (60%) biological parents, with a mean age of 33 (SD=6.83, range=20–59). Child';s age ranged from 1–70 months. In separate linear regression analyses, parent agreement with HCP advice about guidelines ($\beta=.42, p<.001$), parent trust in HCPs ($\beta=.40, p<.001$), self-efficacy to follow HCP advice about guidelines ($\beta=.46, p<.001$), and comfort talking about guidelines ($\beta=.35, p<.001$) predicted number of pediatric clinical practice guidelines to which parents adhered. In separate logistic regression analyses, communication about each guideline significantly and positively predicted adherence to that guideline (ORs from 2.23 (furniture anchoring) to 30.84 (routine vaccinations), all $p<.05$) with the exception of adherence to gun safety, $OR=1.21, n.s.$). One anomaly was trampoline use, where HCP communication was associated with lower likelihood of adherence to trampoline guidelines ($OR=.25, p=.001$).

Discussion: Findings demonstrate the clinical and public health significance of discussions about safety guidelines and the importance of interpersonal relationships between parents and HCPs when discussing health and safety during routine pediatric visits.

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PATIENT-PROVIDER COMMUNICATION IN MOTIVATIONAL INTERVIEWING WEIGHT LOSS SESSIONS WITH AFRICAN AMERICAN YOUTH AND CAREGIVERS

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Background: Motivational Interviewing (MI) is an empirically supported communication technique to increase motivation for behavior change. Research on how MI works has focused on skilled MI providers with less attention to paraprofessionals'; delivery of MI-based interventions. Fit Families (FF) is a 6 month weight loss intervention delivered by community health workers (CHWs) to African American adolescents with obesity (AAAOs) and their caregivers (CGs). In FF, families are taught evidence-based cognitive-behavioral weight loss skills using MI-communication strategies. The goal of this study was to understand how use of MI by CHWs in FF treatment sessions was related to AAAOs and CG change talk (CT; motivational statements about weight loss) and sustain talk (ST; amotivational statements about weight loss).

Methods: We analyzed one motivation-building session (MB, n=60) and one of two skill-building sessions, self-monitoring (SM, n=38) or environmental control (EC, n=31) for 75 enrolled families. Two coders used the Minority Youth-Sequential Code for Observing Process Exchanges to code communication behaviors, such as CT and ST (k= .457-.711 with 96.8–99.3% agreement). Relative rates of communication behavior to session duration were calculated (frequency of communication behavior/length of session).

Results: AAAOs expressed significantly more CT and ST in skill sessions than in MBs (CT: $M_{MB}=22.6, M_{SM}=50.8, M_{EC}=47.6$; ST: $M_{MB}=3.5, M_{SM}=8.5, M_{EC}=21.5$). There were no differences in CGs'; CT across sessions but CGs expressed significantly more ST in ECs vs MBs ($M_{MB}=3.3, M_{SM}=4.8, M_{EC}=6.5$). CHWs asked significantly more questions eliciting CT in SMs and ECs vs MB ($M_{MB}=19.7, M_{SM}=37.0, M_{EC}=34.3$); no differences were found in reflections of CT. CHWs reflected significantly more ST in ECs vs MBs and SMs ($M_{MB}=1.76, M_{SM}=1.44, M_{EC}=9.0$) and asked significantly more questions eliciting ST in ECs vs MBs and SMs ($M_{MB}=1.8, M_{SM}=2.6, M_{EC}=10.9$). All $ps \leq .01$

Conclusions: AAAOs'; higher rates of CT and ST during skills sessions may reflect therapeutic work to resolve ambivalence about weight-related behavior change. CGs'; higher rates of ST during ECs may reflect a lack of motivation for change or perceived barriers to change. CHWs may influence low motivation by asking more questions of ST and reflecting more ST during EC sessions. CHWs may need more training in how to acknowledge ST and transition to eliciting CT to move towards behavior change. Next steps include sequential analysis to examine the temporal sequencing of patient-provider communication related to weight loss (i.e., which CHW behavior leads to CT in MB session vs skill-building sessions).

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RECURRENT RISK COMMUNICATION WITH FAMILY AND PHYSICIANS

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Numerous models provide recurrence risk information for breast cancer patients based on tumor characteristics, and such models have clinical utility in surgical, hormonal, and chemotherapeutic decision-making. Along with needing to understand this risk information to share in treatment decision-making, patients can also communicate this risk information with family members who may assist with and be affected by these decisions. The current analysis explored baseline patient communication with family and physicians in an RCT of a risk communication intervention. Breast cancer patients (n=167) with Stage 0–2 breast cancer who were predominantly from the medically-underserved Appalachian region were included. Over a quarter of these breast cancer patients believed their risk lower than an average woman. Most felt that they had quite a bit/very much knowledge of their cancer diagnosis (83.5%), but fewer perceived this level of knowledge for their recurrence risk (48.2%). Most had talked to their families (61.9%) and physicians (70.0%) about their recurrence risk, and some noted talking to their families daily about their risk. The patient initiated conversations with family members 69.1% of the time and with physicians 49.6% of the time. Most patients planned to talk to family (78.3%) and physicians (93.9%) about their recurrence risk in the future. A logistic regression comparing those who had/had not talked to their family indicated that those who had talked to family were younger (OR=.34, 95%CI .14-.84, p<.02), had higher subjective knowledge of recurrence risk (OR=1.52, 95%CI=.97-2.39, p<.07), and greater worry (OR=1.87, 95%CI=.94-3.72, p<.08). A logistic regression comparing those who had/had not talked to their physician indicated that those who had talked to their physician were younger (OR=.20, 95%CI=.07-.53, p<.01) and had higher cancer worry (OR=1.64, 95%CI=1.03–2.60, p<.04). When dividing the sample into younger and older age groups, the relationships were strengthened for the younger age group. The younger age group was more likely to talk to family and physicians overall (p's<.01). In sum, younger age and worry may be driving greater discussion about recurrence risk, perhaps due to concern about hereditary cancer and risk to biological relatives. In addition, many patients do not have accurate perceptions of their own risk and perceive that their physicians are not communicating recurrence risk to them. Thus, there is an apparent disconnect between available recurrence risk information and patient understanding, and this may be more pronounced in older breast cancer patients.

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SUPPORTING CANCER CONTROL CAPACITY AMONG COMMUNITY HEALTH WORKERS: EVALUATION OF A CULTURALLY-RELEVANT INITIATIVE IN ALASKA

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Objective: In response to tribal primary care providers' requests, a research team at the Alaska Native Tribal Health Consortium developed a culturally-respectful course designed to support cancer control in rural Alaska through online education. Cancer is the leading cause of death in Alaska, and harsh weather patterns, limited funding, and geographic expanse, limit the amount of in-person training that can be provided to support cancer control.

Methods: The semester-long university course incorporates ten interactive modules, digital storytelling, and synchronous sessions. Course development, implementation, and evaluation were guided by Empowerment Theory and the Community Based Participatory Action Research framework. The course was created with input from an advisory group of Alaska's tribal primary care providers and partners. Course participants were invited to complete evaluation surveys at the beginning of course, end of course, and six months post-course, as well as a 2–3 month post-course interview. While enrollment and evaluation is ongoing, as of September 2017, a total of 37 individuals had enrolled in three course offerings.

Results: Measured cancer control capacity variables increased from beginning to end of course, with little to no attrition from end of course to 6-months post-course. For example, as a result of course participation, learners' comfort sharing cancer information with their communities increased by 32% from beginning to end of course (a shift from 3.4 to 4.4 on a scale of 1 to 5), persisting through 6-months post-course (4.4). At the beginning of the course, learners reported consuming an average of 1.2 vegetables per day in the prior month, which increased to 1.7 at end of course, and rose to 2.7 by 6-months post-course. At 6-months post-course, 93% of learners reported reducing their own cancer risk as a result of course participation; increasing physical activity, getting cancer screenings, and cutting down on tobacco.

Conclusions: The course addresses a need for online education to support cancer control capacity, and has supported increased capacity and health behavior change. The course could serve as a model for online education that supports cancer control capacity. In the words of learners:

"I didn't know a whole lot about cancer before starting this whole cancer education course and now I feel a lot more comfortable in handing out information to patients and family."

"By talking to our patients, we can save a life"

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TAILORED TEXTS: AN APPLICATION OF REGULATORY FIT TO TEXT MESSAGES DESIGNED TO REDUCE HIGH-RISK DRINKING

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Although there are robust findings on text-message delivery and outcomes for health interventions, little work has been done to look at message content from a communication and message language perspective. The goal of this study was to compare two versions of text message wording and the impact that each has on college students'; drinking behaviors. The study used regulatory focus and regulatory fit as the frameworks for message language manipulation. Regulatory fit is a model used to explain how individuals make decisions about engaging in goal-oriented behaviors and rests on the assumption that individuals are either promotion-oriented (i.e., focused on accomplishment and obtaining positive outcomes) or prevention-oriented (i.e., focused on vigilance and avoiding negative outcomes). Messages can be framed as either prevention-oriented or promotion-oriented, and preference for either type of message is determined by the attitudes and values of the message recipient; people react to messages in ways that are consistent with their current goal orientations.

In this 2 (regulatory fit orientation- prevention or promotion) x 3 (treatment group- congruent, incongruent, or control) x 2 (pre-test, post-test) experiment, participants (N=279) were randomly assigned to one of three groups: the congruent group (received text messages that matched their regulatory focus), incongruent group (received text messages that were mismatched with their regulatory focus), and the control group (received general health text messages). Messages were tailored by regulatory fit (prevention-oriented or promotion-oriented), which was assessed prior to the intervention. Mixed factorial analyses of covariance revealed that prevention-oriented individuals who received text messages that were incongruent with their regulatory focus reported drinking alcohol for more hours than participants in the congruent or control groups. Mean scores illustrated a pattern suggesting that prevention-oriented individuals who received incongruent messages were also more likely to consume a higher quantity of drinks and engage in high-risk drinking behaviors than individuals in the congruent and control groups. Therefore, there is reason to believe that sending text messages about alcohol that do not match an individual';s regulatory focus can lead to negative drinking behaviors.

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WHAT WE WANT AND NEED IN END-OF-LIFE CARE: A REGULATORY FOCUS PERSPECTIVE

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Background: Despite the publication of *Dying in America* (IOM, 2014) advocating more attention to advance care planning, and the fact that prior study has demonstrated the advantage of advance care planning in terms of quality of end-of-life care (Brinkman-Stoppelenburg, 2014), individuals continue to resist planning care at the end-of-life.

Object: The present study seeks to examine how individuals'; basic regulatory focus on promotion and prevention (Higgins 1997) may predict not only what individuals'; seek to plan about end-of-life care, but what may encourage or discourage such planning.

Method: Participants (N =419) completed an online survey regarding end-of-life care planning preferences, as well as a composite measure of their promotion and prevention focus (see Hawes et al 2010).

Results: From initial factor analyses, separate totals for participants'; general sensitivity to the challenges and incentives for end-of-life care planning were created. Subsequent regression analyses that controlled for participants'; current well-being found that participants'; promotion focus strength significantly predicted a general sensitivity to incentives for such planning ($pr=.26$, $F(1,414)=28.7$, $p < .001$), but it was non-significantly (and negatively) related to a sensitivity to the challenges of such planning ($pr= -.06$, $F(1,414)= 1.4$, $p > .2$). Alternatively, participants'; prevention focus strength was found to predict their general sensitivity to the challenges of end-of-life planning ($pr=.23$, $F(1,414)=23.3$, $p < .001$). Participants'; prevention focus strength did predict their general sensitivity to incentives for such planning, but significantly less so than their promotion focus strength ($pr=.15$, $F(1,414)=9.2$, $p < .01$).

An additional factor analysis revealed distinct preferences for specifying the nature of end-of-life care and for specifying who this care would involve. Separate totals for each preference were calculated and subsequent regression analyses that again controlled for participants'; current well-being found that participants'; promotion focus positively predict their preference for specifying who would be involved with this care ($pr=.19$, $F(1,414)=16.1$, $p < .001$), but negatively predict their preference for planning the care itself ($pr=-.15$, $F(1,414)=9.4$, $p < .01$). Alternatively, participants'; prevention focus was found to positively predict their preference for planning the nature of the care ($pr=.11$, $F(1,414)=5.2$, $p < .05$), as well as their preference for planning who would be involved ($pr=.18$, $F(1,414)=14.6$, $p < .001$).

Conclusion: The present findings suggest that differences in regulatory focus may predict how individuals approach planning for end-of-life care, as well as what may encourage or discourage such planning. Implications for message-tailored interventions will be discussed.

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BRIEF INTERVENTION TO INCREASE PHYSICAL ACTIVITY LEVELS AMONG OBESE MEN WITH SERIOUS MENTAL ILLNESS: A FEASIBILITY STUDY

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Context: People with serious mental illness (SMI) have a reduced life expectancy notably because of cardiovascular disease and their metabolic consequences, including obesity. While physical activity (PA) is recommended to manage these metabolic complications, people with SMI are insufficiently active and have high levels of sedentary behaviours. Moreover, while nurses have an important role to play in that context, they expressed a lack of training and time to promote PA in their clinical routine. So, there is a need to develop new feasible interventions to increase PA. The objective of the present study was to evaluate the feasibility of a brief intervention on PA level among adults with obesity and SMI.

Methods: Open 6-week brief intervention (with 2 individuals meetings lasting 10 to 15 minutes) using a volitional help sheet based on the processes of change from the transtheoretical model and the implementation intention. The intervention was provided by a nurse who received 3 training sessions on motivation to PA and the volitional help sheet. PA and time spent in sedentary behaviours were evaluated using the International Physical Activity Questionnaire. Experiential and behavioural strategies of motivation were also measured by questionnaires.

Results: Sample size of 12 men (mean age: 33.2 ± 10.1) with obesity (mean BMI: $35.8 \pm 7.7 \text{ kg/m}^2$) and diagnosis of SMI (75% with schizophrenia) were recruited and included in the 6-week brief intervention. In terms of feasibility, the adherence rate was 100% and no drop-out was noted. Regarding satisfaction, 80% of participants reported that the project met their expectations and 92% would refer a relative or a peer to the project. Moreover, 77% reported that the project has facilitated another behaviour change (e.g., healthy eating). In terms of impact, a significant improvement were found regarding total PA ($+30 \pm 21.2 \text{ min/week}$; $d = 0.76$), walking behaviour ($+65 \pm 79.4 \text{ min/week}$; $d = 1.01$) and reduction in time spent sitting ($-1.66 \pm 0.16 \text{ hours/day}$; $d = -0.75$). To increase their PA, participants used behavioural strategies ($+0.30 \pm 0.63$; $d = 0.41$) rather than experiential strategies ($+0.01 \pm 0.65$; $d = 0.02$).

Conclusion: The motivation-based brief intervention using a volitional help sheet is feasible and has promising results for both, participants and nurse. However, replication is needed with a larger sample size and a longer duration to validate our results.

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PSYCHOLOGICAL STATUS IN PATIENTS DIFFERS AS A FUNCTION OF TIME, SEX, AND/OR CORONARY ARTERY DISEASE STATUS

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Psychological distress is generally more prevalent and severe among patients with coronary artery disease (CAD) compared to healthy individuals. However, little is known regarding its time course, and whether these differences extend to individuals with non-cardiovascular (CV) illnesses.

Objective: Examine the presence, severity, and time course of psychological distress in men and women with CAD and those of similarly aged individuals suffering from other non-CV conditions.

Method: A total of 1294 individuals (61% men; mean_{age} = 60 ± 7.2 yrs) with CAD or non-CV illnesses completed questionnaires on social support, hostility, stress, as well as symptoms of anxiety and depression at baseline as well as 4.8 ± 0.8 yrs later. Analyses involved mixed (Sex*CAD status*Time) repeated measures analyses on continuous data, as well as Chi square and McNemar analyses on categorical clinical cut-off scores.

Results: At T1, women with CAD reported more symptoms of depression, anxiety and stress compared to the men and to women without CV (all p 's < 0.001). By T2, women with CAD still reported more symptoms of depression compared to the other groups, as well as more anxiety compared to the men (p 's < 0.01). While anxiety and perceived stress decreased over time, depression, hostility and social support increased (all p 's < 0.001). Patients with CAD reported only slightly less social support ($p < 0.001$) and more hostility compared to non-CV participants ($p = 0.014$). Analyses using categorical data showed that women with CAD fell within the clinical range for depression (17% vs. <7%, $p < 0.001$), anxiety (42% vs. <25%, $p = 0.001$), and stress (25% vs. <14%, $p = 0.030$) more frequently compared to others at T1. By T2, differences were less notable, though still significant for depression ($p = 0.009$) and stress ($p = 0.002$). More individuals fell within the clinical range of depression at T2 compared to T1 (12% vs. 8%), with the most notable increases observed in men with CAD ($p < 0.001$) and women without CV ($p = 0.038$). The prevalence of clinical anxiety decreased significantly in all groups by T2.

Conclusion: While psychological distress was prevalent among these patients with diverse health conditions, women with CAD were particularly and chronically vulnerable. The evolution of patient distress differed as a function of the measure examined, their sex, and/or CV status. Findings suggest the need for repeated screening for distress, and tailoring of the psychosocial services offered.

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RELATIONSHIP BETWEEN SEDENTARY TIME AND MILD COGNITIVE IMPAIRMENT AMONG OLDER ADULTS IN CHINA

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High sedentary time may constitute an important risk factor for cognitive health. However, the association of sedentary time with mild cognitive impairment (MCI) among elderly people has not been studied extensively. This study aimed to investigate the association between sedentary time and MCI in elderly residents of urban communities in China. Participants were from the Health and Environment Control Study of older adults of Lu'an city in Anhui province. A total of 1217 individuals aged at least 60 years old were recruited by telephone of whom 1077 (88.5%) completed questionnaire survey, face-to-face interviews, and physical examination. Sedentary time was categorized as 0–1 hours per day – 369 participants (34.3%); 1–2 hours per day – 292 participants (27.1%); 2–3 hours per day – 163 participants (15.1%); and > 3 hours per day – 253 participant (23.5%). Cognitive function was evaluated by the Mini-Mental State Examination (MMSE). 184 participants (17.1%) were identified as at risk for MCI. Binary logistic regression was used to evaluate the associations between sedentary time and MCI. On univariate analysis, sedentary time was significantly associated with residential area, occupation, degree of education, and annual income. MCI was significantly associated with residential area, gender, age, occupation, income, education level, alcohol use, working condition, siesta (midday nap) and sedentary time (all p s < 0.05). After adjustment for confounders (residential area, gender, age, occupation, annual income, education level, alcohol use, working condition, and siesta), sitting for 2–3 hours per day was correlated negatively (OR=0.514, 95%, CI=0.275–0.961) with MCI. That is likelihood of MCI was less among those sitting 2–3 hours per day than among those sitting for fewer than 2 or more than 3 hours per day. This complex relationship suggests that sedentary time is not a simple variable but may be associated with other characteristics, such as mental work at moderate, 2–3 hours per day, or more passive activity at more than three hours per day sedentary time.

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TRAIT ANXIETY AND RESTRICTIVE EATING AS PREDICTORS OF SLEEP ONSET LATENCY AND SLEEP QUALITY

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Reports of anxiety, eating disorders, and sleep disturbances are common among college students, and high rates of comorbidity exist among these complaints. The associations among these issues are likely due to complex overlapping psychophysiological factors. Anxiety may predict impaired sleep by leading to increases in intrusive thoughts and worries that make it difficult to fall asleep and obtain good quality sleep. Restrictive eating (i.e., reducing food intake and/or restricting calories) may predict impaired sleep by altering metabolism (e.g., leptin, glucose, or ghrelin levels) and contributing to negative mood. Although it seems intuitive that restrictive eating, anxiety, and sleep would be associated, no studies have systematically examined associations between these variables in a diverse sample of college students. Therefore, the present study examined trait anxiety and restrictive eating as predictors of subjective sleep. Trait anxiety was measured using the State Trait Anxiety Inventory. Restrictive eating was measured using an item from a national youth risk survey that asked about restriction of food, calories, or fat-content in food intake with the intent of weight loss over the past 30 days. Sleep was measured via two self-report items asking about satisfaction with current sleep pattern (i.e., sleep quality) and number of minutes it typically took to fall asleep over the past month (i.e., sleep onset latency, SOL). Participants were 452 college students ages 18–25 (66% female; 59% White). Analyses were conducted using multiple linear regression (using separate models for each sleep outcome) and controlled for gender and BMI. The overall models were significant for both sleep quality ($F(4, 410) = 20.24, p < .001$) and SOL ($F(4, 408) = 9.90, p < .001$). Predictors accounted for 17% of the variability in sleep quality and 9% of the variability in SOL. When trait anxiety and restrictive eating were examined as predictors of sleep quality and SOL, only trait anxiety significantly predicted poorer sleep quality ($\beta = -0.93, p < .001$) and longer SOL ($\beta = 0.73, p < .001$). These results suggest anxiety may play a more important role in the subjective experience of sleep than does restrictive eating. Future research should examine if these same results hold using more objective measures of sleep and food restriction. To improve treatment outcomes, it may be beneficial to address overlapping comorbidities (e.g., sleep difficulties and anxiety).

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YOGA AND SEVERE MENTAL ILLNESS

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Schizophrenia spectrum disorders (SSD) are a group of related psychiatric conditions involving some degree of reality distortion that affect approximately 51 million people worldwide. SSDs are characterized by hallucinations, delusions, disorganized thought, and are often accompanied by social skills deficits, and lack of motivation. Standard treatment for SSDs includes pharmacotherapy and psychotherapy. In recent years the efficacy of adjunct treatments such as aerobic exercise and social skills training have come to the forefront of research and practice. The purpose of this literature review was to review the effect of a yoga intervention on SSD symptoms. Databases used for this review included: Academic Search Premier, Health Source: Nursing/Academic Edition; MEDLINE; Psychology and Behavioral Sciences Collection, PsycARTICLES; and PsycINFO. The search engine EBSCOHost was used to simultaneously search these databases without a date restriction. The search terms used were “yoga AND schizophrenia,” “yoga AND negative symptoms,” and “yoga AND positive symptoms.” Inclusion criteria for studies were: 1) must have used some type of yoga intervention; 2) study participants must have had a SSD diagnosis; 3) had measurable outcomes, and 4) were available in English. This search located a total of 80 articles. Duplicates were eliminated leaving 63 articles, 18 of which met the criteria. The majority (n=11) of the studies were randomized control trials, and outcomes included reduced positive symptoms, reduced negative symptoms, improved facial emotion recognition, increased global functioning, reduced stress and anxiety, and higher quality of life. In conclusion, the efficacy of therapeutic yoga as an adjunctive therapy for people with a SSD appears promising, and deserves further attention and research.

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12 MONTH SMOKING CESSATION OUTCOMES FOR SMOKERS WITH MENTAL HEALTH SYMPTOMS: RESULTS FROM A LARGE WEB-BASED RANDOMIZED TRIAL

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BACKGROUND: Mental health conditions (MHCs) are associated with a greater prevalence of cigarette smoking as well as difficulty quitting smoking. Web-based interventions offer a promising treatment modality for smokers with MHCs by making treatment more accessible (e.g., low-cost, high-reach, ability to be accessed anytime). To date, however, little is known about how smokers with MHCs respond to web-based cessation interventions. Using data from a large trial of two web-based smoking interventions, we compared the 12-month abstinence rates for smokers who screened positive for MHCs to those who did not.

METHODS: Participants were adult smokers enrolled in a large (N=2,637) web-based randomized controlled trial for smoking cessation who completed follow-up surveys at 12-months post-randomization (88% data retention). At baseline, participants completed self-report measures of depression, social anxiety disorder (SAD), post-traumatic stress disorder (PTSD), generalized anxiety disorder (GAD), and panic disorder. Outcomes were 30-day point prevalence abstinence at 12-months post-randomization. Data were analyzed via logistic regression models controlling for treatment condition.

RESULTS: Abstinence rates at 12 months were significantly lower for smokers who screened positive for depression [24%; OR=0.78; 95% CI=0.62–0.98, p=.030], PTSD [24%; OR=0.77; 95% CI=0.61–0.98, p=.030], and panic [23%; OR=0.73; 95% CI=0.57–0.93, p=.010] relative to smokers who did not screen positive for a MHC (29%). Smokers who screened positive for two or more were also less likely to successfully quit [24%; OR=0.78; 95% CI=0.62–0.98, p=.033]. Screening positive for SAD or GAD was not associated with differential odds of quitting.

CONCLUSIONS: This is the first study to examine long-term quit rates in response to a web-based intervention among smokers screening positive for mental health conditions. Although smokers screening positive for SAD and GAD demonstrate similar quit rates to smokers without MHCs, those with elevated symptoms of depression, PTSD, and panic and those who screen positive for multiple MHCs may benefit from web-based interventions that address their mental health symptoms.

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AN UNDERSTANDING OF THE RELATIONSHIP BETWEEN HORMONAL BIRTH CONTROL AND DEPRESSION IN COLLEGE-AGED WOMEN

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Aims: Decades of speculation have suggested a relationship between hormonal birth control (BC) use and depression. Although previous literature has yet to determine a definitive conclusion on this issue, the current study reports findings based on an integrative life course theoretical framework to investigate the association of hormonal BC and depression.

Methods: Secondary analysis of data from the National Longitudinal Study of Adolescent to Adult Health was conducted using data from 7,563 sexually active women between 18 and 32 years old. Participants self-reported past year contraceptive use and depression including lifetime diagnosis, past week symptoms, and past year treatment utilization. Analysis included z-tests for proportions, t-tests, and logistic regressions.

Results: Some women reported using more than one hormonal BC within the past year, most often BC pills and the BC shot. Women who used both the pill and shot within the past year had a higher rate of diagnosed depression (23.0%) than women using the pill only (15.4%) and those using non-hormonal methods (15.7%, p

Conclusion: Findings support a relationship between hormonal BC use and treatment of depression, including therapy and medication use, with an additive effect when women use both the pill and shot within the past year. While there is a higher rate of diagnosed depression among women using hormonal BC, this association may be contributed to demographic characteristics and past sexual behavior. There was no association found between past week depressive symptoms and hormonal BC use, suggesting that the relationship between hormonal BC and depression may be specific to the identification and treatment of depression and the prevalence of depression.

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ANXIETY SENSITIVITY, EMOTION REGULATION AND SOMATIC SYMPTOMS AMONG PATIENTS WITH AND WITHOUT BORDERLINE PERSONALITY DISORDER

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Background. Borderline Personality Disorder (BPD) is characterized by emotional lability, impulsivity, instability in relationships and unstable sense of self. BPD occurs in 1–3% of nonclinical samples and 10% of outpatient populations. National data indicates that patients with BPD are also at elevated risk for physical health problems compared to patients without BPD. Anxiety sensitivity (AS; fear of fear) and emotional dysregulation (ED; difficulties with regulating emotions) are well established cognitive-emotional vulnerability factors relevant to patients with BPD. These vulnerability factors may also contribute to the elevated experience of physical health symptoms in patients with BPD. The objectives of this study were to compare levels of AS (Anxiety Sensitivity Index-3; ASI3), ED (Difficulties with Emotion Regulation Scale; DERS) and severity of somatic symptoms (Patient Health Questionnaire-15; PHQ15) among patients with and without BPD; and to evaluate the role of AS in the relationship between ED and somatic symptoms among patients with and without BPD.

Method. Patients (N=56) presenting for outpatient psychotherapy were consented to participate in a study evaluating the effectiveness of psychotherapy treatments. Patients completed electronic self-report measures and a structured diagnostic interview with a therapist.

Results. Fifty percent of the sample met DSM-IV criteria for BPD (n=18) or had elevated BPD features (>3 features; n=10). These groups were collapsed into one BPD group and compared to patients without BPD (n=28). The BPD group had significantly higher scores on the DERS (M=119.07, SD=4.57) compared to patients without BPD [M= 92.71, SD=19.36; t(56)=-4.62, p ASI3 or PHQ15. Results from mediation analyses conducted via the PROCESS macro for SPSS revealed a significant indirect effect of ED on somatic symptoms via AS, b=.07, CI [0.15, 0.26] but only in the BPD group. AS accounted for roughly 75% of the total effect, P_M=.76.

Conclusions. Our findings suggest that patients presenting with BPD or elevated BPD features for psychotherapy demonstrate greater ED relative to patients without BPD. Poor emotion regulation appears to indirectly affect somatic symptoms via AS in patients with BPD. Future inquiry regarding the impact of ED and AS on physical health in patients with BPD is needed to better inform psychotherapy treatment approaches for this population.

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ASSOCIATION BETWEEN SLEEP QUALITY, DISORDERED EATING, AND DEPRESSIVE SYMPTOMS AMONG COLLEGE STUDENTS

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Background: Approximately one-fifth of college students report experiencing depression. Correlates of depressive symptoms in this population include: substance use, disordered eating practices, and body mass index (BMI). However, there is a paucity of research examining how sleep quality is related to depressive symptoms in the context of these health and mental health factors. Given that substance use, elevated weight, disordered eating, and sleep may be amenable to health promotion interventions, understanding the association among these factors is key to improving the well-being of college students. Thus, we explored the association between sleep quality and depressive symptoms; accounting for BMI, disordered eating, alcohol and drug use.

Method: 172 college students between the ages of 18 and 25 ($M=19.67$, $SD=1.78$) participated in this study. A total of 41% self-identified as White, 36% as Black, 10% as multiracial, 9% as Hispanic, and 4% as "Other race"; with 75% being female. Participants completed measures of depressive symptoms (Center for Epidemiological Studies Depression Scale), alcohol use (Alcohol Use Disorders Test), drug use (Drug Use Disorders Test), disordered eating (Restraint Subscale of the Eating Disorder Examination Questionnaire) and sleep quality (Pittsburg Sleep Quality Index). Measured height and weight were used to calculate BMI (kg/m^2). A hierarchical regression was conducted across 3 steps to predict depressive symptoms. Gender and race/ethnicity were entered into Step 1 as covariates; BMI, disordered eating, alcohol use, and drug use were entered into Step 2; and sleep quality were entered into Step 3.

Results: The final step of the regression model was significant, $F(11, 161)=8.00$, $Adj. R^2=.31$, $p<.001$, with higher sleep quality ($B=-.47$, $p<.001$) associated with lower depressive symptoms and more disordered eating practices ($B=.18$, $p<.05$) associated with higher depressive symptoms. BMI, alcohol use, and drug use were not significantly associated with depressive symptoms in this sample.

Discussion: Even accounting for the association between disordered eating and depressive symptoms, sleep quality uniquely contributed to the variance in depressive symptomatology among college students. Future research is needed to explore mechanisms by which sleep quality is associated with depressive symptoms (such as physiological dysregulation) in order to guide the design and implementation of effective health promotion interventions.

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6:30 PM-7:30 PM

ASSOCIATIONS BETWEEN RELIGIOSITY/SPIRITUALITY AND MENTAL HEALTH BEHAVIORS IN YOUNG ADULTS

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The purpose of this study was to evaluate the association between religiosity and mental health outcomes among young adults. Young adults ($n=775$) from colleges and universities in a southwestern state were surveyed to assess associations between young adult depressive symptoms and suicide ideation, religiosity beliefs, and protective assets of the relationships with dad and mom. Logistic regression, which produced odds ratios (ORs), was used to determine significant associations between religiosity and depression and suicide ideation. Findings indicated significant inverse associations between higher scores in higher levels of organizational religious activities (OR range = 0.208 - 0.555), higher levels of non-organizational religious activities (OR range = 0.282 - 0.399), and the most positive responses to the three items measuring intrinsic religiosity (OR range = 0.216 - 0.489) with young adult depressive symptoms during the last week. In addition, higher scores on the religiosity subscales were significantly associated with fewer reports of suicide ideation in the last 12 months. OR findings suggest that participants with higher scores in religiosity had less risk for development of depression and suicide ideation. Overall, religiosity beliefs and practices appear to be associated with fewer depressive symptoms and suicide ideation. Inclusion of religious/spirituality-oriented components may be important to include in mental health programming for those emerging adults that report having high religiosity.

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BARRIERS AND FACILITATORS TO OBESITY MANAGEMENT IN RURAL ADULTS WITH SERIOUS MENTAL ILLNESS

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Background: Adults with Serious Mental Illness (SMI) are more likely to be overweight or obese (OW/OB) and to experience obesity-related diseases such as metabolic syndrome, diabetes mellitus (Correll, et al., 2009), or cardiovascular disease (Lavie et al., 2013). Engagement in health behavior is also poor in this population (Scott & Happell, 2011). Moreover, development of healthy lifestyle interventions often fail to include the needs and perspectives of those residing in rural areas.

Purpose: The purpose of this study is to develop a rich understanding of the needs and barriers regarding healthy lifestyle practices among rural adults with SMI. The study answers the following questions: (1) What prevents rural adults with SMI from engaging in health behaviors, (2) What would facilitate their engagement in health behaviors, and (3) What components would form acceptable and rurally accessible intervention.

Methods: Participants were recruited from community mental health centers in Wyoming and Colorado. Participants were age 18 years or older, had a diagnosis of a SMI and provided informed consent. Qualified participants engaged in 60-minute focus groups across five communities. Data were transcribed verbatim and analyzed in three stages according to methods of Corbin and Strauss, 2008.

Results: Among participants ($n=27$) a majority were women ($n = 17$, 63%), Non-Hispanic ($n = 26$, 96.3%), and White ($n=27$, 100%), had a diagnosis of schizophrenia ($n = 18$, 66.7%), some college education ($n=13$, 48.1%), and lived alone in an apartment ($n=14$, 51.9%).

Discussion: Thematic barriers to healthy behaviors included rural environmental conditions, such as lack of transportation, limited access to programs, and perceived stigma. In addition, participants identified mental health symptoms and medication side-effects as barriers. Facilitators included social support, tangible support from providers, and establishing routines.

Conclusion: Strategies to address healthy lifestyle barriers for adults with SMI in rural areas are needed. These persons may benefit from expansion of tangible supports and strategic leveraging of limited resources. Dissemination of healthy lifestyle programs by way of telehealth or train-the-trainer methods may increase intervention access. Modification of existing programs to directly address and problem-solve rural barriers is needed. Findings are limited to rural areas in Wyoming and Colorado and may not generalize to other rural or urban areas.

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BINGE WATCHING: A SEDENTARY BEHAVIOR ASSOCIATED WITH INCREASED ANXIETY AND DEPRESSION

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Binge watching has rapidly become a common sedentary behavior. Netflix reported that more than 80% of their 83,000,000 subscribers binge watch. However, little quantitative research has attempted to measure psychosocial correlates of binge watching. The current study tested whether binge watching frequency is associated with anxiety and depression. Participants ($N = 338$) were recruited and completed a survey online in the autumn of 2016. Individuals who binged more than 3 times per week had increased levels of depression ($F(3,328)=5.94$; $p = .001$; $\eta^2 = .06$ and anxiety $F(3,301)=3.52$; $p = .016$; $\eta^2 = .04$). Participants were also asked to describe their binge watching behaviors. Qualitative data suggest that participants see binge watching as a generally positive aspect of their life. Less than 9% of participants described their binge watching habits as a negative aspect in their life. Though associated with depression and anxiety, binge watching may represent an adaptive or maladaptive coping response. Future research should seek to establish directionality and rule out the influence of outside variables.

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CHANGES IN ACUTE INFLAMMATORY MARKERS IN RESPONSE TO EXERCISE IN MAJOR DEPRESSIVE DISORDER

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Introduction: Depression is a burdensome and challenging illness, in part, due to its heterogeneous etiology. Symptoms of depression have been associated with inflammation in major depressive disorder (MDD) and chronic exercise has anti-inflammatory effects. Although chronic exercise generally results in a decrease in inflammatory markers, acute exercise can result in a pro-inflammatory response both during and shortly after the exercise session. However, research on the inflammatory response to exercise has largely been limited to high-intensity or long-duration exercise in healthy adults.

Purpose: To examine the inflammatory response to an acute bout of moderate-intensity exercise for women with MDD compared to a quiet rest control condition, and to explore the influence of depression severity.

Methods: Participants were 20 women (age 39.9 ± 14.3 years) with mild ($n=7$) or moderate-to-severe ($n=13$) MDD based on the Beck Depression Inventory-II (cutoff:19.5). Pro-inflammatory cytokines (interleukin 6 [IL-6], interleukin 8 [IL-8], and Tumor Necrosis Factor- α [TNF- α]) were measured in serum from blood drawn before and within 10 minutes after a 20-minute moderate intensity (rating of perceived exertion: 13) cycling session or a quiet rest condition on separate days. Independent-samples t-tests compared group changes for each condition. Cohen's d effect sizes determined the magnitude of differences between the severity subgroups.

Results: There were no significant differences in cytokine levels between groups at baseline for either testing condition. No significant pre-post differences were observed in the quiet rest condition for any cytokine ($p>.05$). For the exercise condition, no significant difference was observed between groups for IL-6 ($p=.91$) or TNF- α ($p=.98$). However, for IL-8, there was a significant group difference in change from pre- to post-exercise ($p=0.02$; large effect: $d=1.3$) with an increase of $40 \pm 42.7\%$ for the mild-to-moderate group and a decrease of $12.3 \pm 37.7\%$ for the severe group.

Conclusions: A greater pro-inflammatory response (via IL-8) to moderate exercise was observed for women with mild MDD compared to women with moderate-to-severe MDD. These results suggest an interaction between depression severity and the inflammatory response to acute exercise. A clearer understanding of inflammatory responses to different stressors could provide additional information on the pathophysiology of MDD and may lead to targeted treatments.

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CLIMATE SCHOOLS COMBINED STUDY: MENTAL HEALTH OUTCOMES OF AN ONLINE APPROACH TO PREVENT SUBSTANCE USE AND MENTAL HEALTH PROBLEMS

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Background: Anxiety, depressive and substance use disorders account for three quarters of the disability attributed to mental disorders and frequently co-occur. While programs for the prevention and reduction of symptoms associated with (i) substance use and (ii) mental health disorders exist, research is yet to determine if a combined approach is more effective. This paper describes the mental health outcomes of a cluster randomised controlled trial to evaluate the effectiveness of the CLIMATE Schools Combined intervention, a universal approach to preventing substance use and mental health problems among adolescents.

Methods: Data come from 6,411 school students from 71 schools across Australia participating in the CLIMATE Schools Combined study (mean age at baseline=13.5). Linear mixed models were implemented to evaluate 36-month trial outcomes on symptoms of depression, generalised anxiety disorder and social phobia.

Results: In the control group there was an increasing trajectory of mental health symptoms, whereas these symptoms remained stable in the CLIMATE Schools Combined intervention group. This pattern was evident for depression symptoms ($b = -0.63$ [0.27], $p = 0.021$), GAD symptoms ($b = -0.38$ [0.25], $p = 0.006$) and social phobia symptoms ($b = -0.35$ [0.17], $p = 0.045$).

Conclusion: For the first time, there is evidence that a combined approach to the prevention of both substance use and mental health results in significantly lower growth in mental health symptoms related to depression, generalized anxiety disorder and social phobia.

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COMPARING NETWORK TO EXPLORATORY FACTOR ANALYSIS IN PSYCHOSOCIAL SYNDemics IN HIGH-RISK HIV-NEGATIVE MEN WHO HAVE SEX WITH MEN

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Introduction: In the U.S., HIV acquisition risk is highest among men who have sex with men (MSM). Syndemics, psychosocial problems that interact with each other and poor health behavior, are additively associated with increased condomless sex, HIV incidence, and HIV prevalence among MSM. However, information about how these syndemics interrelate with each other is under-explored.

Methods: To examine the associations between nine syndemic problems in 184 MSM at high risk of HIV acquisition, we first examined bivariate correlations, and then compared exploratory factor analyses (EFA) to a network analysis. Syndemics were assessed by self-report measures. Network analyses (presented graphically) consist of variables, called nodes, and the associations between variables, called edges. This regularized network employed the graphical LASSO algorithm and Extended Bayesian Information Criteria with a hyperparameter of $\gamma=.5$ to produce a graphically parsimonious yet sensitive network.

Results: Correlation analyses revealed that many of the syndemics were associated with each other, but this was not always the case. Based on the eigenvalues, the 2- and 3-factor models were potential solutions. However, the EFA did not yield a definitive solution across either 2- or 3-factor models. Network analysis, however, revealed that the relationships (absolute edge weights) between suicidal ideation (SI) and injection drug use (IDU; $b=.56$, $SD=.17$, 95% CI[.34, .94]), IDU and substance use ($b=.33$, $SD=.20$, 95% CI[.10, .85]), social anxiety and SI ($b=.29$, $SD=.21$, 95% CI[.09, .82]), and depression and SI ($b=.25$, $SD=.16$, 95% CI[.01, .66]), were all significant, with SI being the most central.

Discussion: This is the first study to conduct a network analysis of syndemics to describe interrelatedness of conditions, beyond additive associations. It is also the first to compare network analysis to EFA in syndemics. Network analysis may be methodologically preferable to EFA in examining the interrelatedness of syndemics because it provides measures of centrality, which can potentially indicate the conditions that drive increased HIV acquisition risk, and lends itself to a visual presentation of the interrelatedness among these intertwined problems. Further research is needed to determine how clusters of conditions, and potentially which symptoms within such conditions, interact most to confer the greatest HIV acquisition risk.

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DO DISEASE CLUSTERS PREDICT DEPRESSIVE SYMPTOMATOLOGY IN OLDER ADULTS?

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Multimorbidity is a common occurrence among older adults and has significant ramifications on mental health. As depression is expected to become the top contributor to chronic disease burden, it is important to understand the effect of multimorbidity on depressive symptoms, and whether particular disease clusters are associated with increased depressive symptoms. The present study investigated whether chronic diseases clustered among an older adult population, and whether these clusters predicted depressive symptom severity. Secondary analyses were performed using interview data from the National Social Life, Health, and Aging Project (NSHAP). Participants were Black, White, and Hispanic adults > 65 years of age ($M=73.7$, $SD=5.7$) who reported at least two chronic illness diagnoses (mean diagnoses = 3.1, $SD = 1.2$). Patterns of comorbidity were assessed using tetrachoric factor analysis and a multivariable linear regression model. Factor analysis demonstrated five disease patterns: cancers, arthritis, pulmonary, metabolic, and stress factors. Analyses demonstrated that the five factors were not predictive of increased depressive symptom severity. However, the total number of conditions was significantly associated with increased depressive symptomatology. This is likely due to the stress associated with chronic disease symptom management, and reflective of poor or unsuccessful disease management and symptom burden. These findings add to the limited body of knowledge investigating disease patterns in older adults, and help to better understand the reciprocal impact of chronic conditions on mental health.

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EDUCATION ON PERINATAL DEPRESSION DURING THE ANTEPARTUM PERIOD IS COMMON AND WELL RECEIVED BY WOMEN

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Prenatal and postpartum depression affect approximately 8–14% of US women; however, less than a quarter of these women receive depression treatment. Lack of education about perinatal depressive symptoms and available resources are barriers to treatment. To further assess education received on perinatal depression during the antepartum period, we examined women's perceptions of communication with their healthcare providers through an online survey. Participants were recruited from a postpartum unit at a large women's hospital, with a total of 79 women completing the survey.

Most women reported that during the antepartum period a healthcare provider discussed treatment options for depression during pregnancy (52%, $n = 41$) and after their baby was born (62%, $n = 48$). Additionally, women reported that the majority of providers offered examples of how depression may feel (73% and 89%, for prenatal and postpartum, respectively) and provided phone numbers for services (75% and 71%, for prenatal and postpartum, respectively). Women were generally satisfied with the information provided on what to do if they felt depressed during pregnancy ($M = 3.80$, $SD = 1.22$ on a scale from 1- not at all satisfied to 5- very satisfied) and after their baby was born ($M = 3.83$, $SD = 1.10$). Women who received information about depressive symptoms and treatment resources reported greater satisfaction than those who did not receive this information ($ps \leq 0.05$). Although women were generally satisfied with the information provided on perinatal depression, they were also interested in additional opportunities to discuss their mood during pregnancy. Women (43%) indicated they would have been interested in talking with a mental health professional about their mood following a prenatal appointment in the same clinic.

Given recent recommendations by the United States Preventive Service Services Task Force to screen for depression during pregnancy, it is promising that most providers are discussing both prenatal and postpartum depression during prenatal care. Moreover, women are satisfied with the information provided on perinatal depression, especially when providers discuss common depressive symptoms and treatment options. In addition to screening for depression in the perinatal period, integrated mental health services in prenatal care settings may also benefit and further meet the needs of pregnant women.

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ENDOCANNABINOID AND MOOD RESPONSES TO MODERATE AND PREFERRED INTENSITY EXERCISE SESSIONS IN MAJOR DEPRESSIVE DISORDER

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Introduction: The endocannabinoid (eCB) system has been implicated in the pathophysiology of depression and, in healthy non-clinical populations, is responsive to acute aerobic exercise.

Purpose: To examine the acute eCB and mood responses to a moderate intensity and a self-selected/preferred intensity exercise session in women with major depressive disorder (MDD).

Methods: Women with MDD ($n = 17$) exercised in separate sessions for 20 min on a stationary bicycle at a moderate (rating of perceived exertion: 13) or a self-selected exercise intensity in a within-subjects, randomized and counter-balanced design. Blood was drawn before and within 10 min after completion of each session and serum concentrations of eCBs (*N*-arachidonylethanolamine [AEA] and 2-arachidonoylglycerol [2AG]) were quantified using stable isotope-dilution, liquid chromatography/mass spectrometry/mass spectrometry. The profile of mood states (POMS) and state-trait anxiety inventory (state only) were completed prior to, 10 min, and 30 min post-exercise. Changes in eCBs were compared across each session using paired sample *t*-tests and Cohen's *d* effect sizes. Changes in mood were related to changes in eCBs using Spearman's ρ .

Results: Significant elevations in AEA ($p = 0.013$) occurred post-exercise in the moderate session (moderate effect sizes: $d = 0.58$), while no significant changes in eCBs were found after the preferred session. Correlational analyses indicated significant ($p < 0.05$) negative associations in the moderate exercise session between changes in AEA and mood at 10 min post-exercise (depression, confusion, fatigue, total mood disturbance [TMD] & state anxiety) and 30 min post-exercise (confusion, TMD & state anxiety). In addition, significant ($p < 0.05$) negative associations were found in the moderate exercise session between 2-AG and mood at 10 min post-exercise (depression & confusion) and 30 min post-exercise (confusion & TMD). No significant eCB-mood relationships were found in the preferred exertion session.

Discussion: In women with MDD, moderate intensity exercise elevated one of the primary eCBs (AEA), while exercise performed at a patient-selected intensity did not. Further, changes in both AEA and 2AG across moderate exercise were associated with improvements in mood up to 30 min following exercise. Exercise can modulate the eCB system acutely in MDD and these changes could play a mechanistic role in the mood-enhancing effects of prescribed acute exercise.

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EXAMINATION OF TRIAGE WORKFLOW FOR CRISIS INTERVENTION

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Introduction: Suicide is currently the tenth leading cause of death in the United States, but many healthcare systems are unprepared with how to prevent or treat suicidal ideation (SI). Given this, the purpose of our study was to pilot and evaluate procedures for triaging suicidal patients within the University of Kansas Health System's Cancer Center (CC) outpatient clinics, which are accredited by the National Cancer Institute.

Methods: Data for this quality improvement study were collected from November 2016 to August 2017. During this time, our psychology faculty ($n = 5$) within the CC implemented a crisis pager system for healthcare providers at the CC to utilize should a patient express SI. This crisis pager number was widely distributed via email, meetings, and the creation of a "badge buddy" for nursing staff. Each psychology faculty member was assigned a specific "on call" day to respond to crisis pages each week (M – F).

Results: During this pilot, we received 38 total crisis calls. Out of all consultations, only seven patients endorsed SI. We completed four crisis safety plans for those who endorsed means/plan to harm oneself, but no intent. Only four patients required hospitalization, although two of these patients were not admitted for acute suicidality, but for uncontrolled symptoms of serious mental illness. Wednesdays were our busiest day, accounting for 12 of the pages. There was variety in the providers who utilized the crisis pager system; i.e., it was not one or two providers paging our team for consultation.

Discussion: A concern amongst healthcare systems is the availability of providers to triage patients when they express SI. Although our CC has a large number of psychologists, these results may still be applicable for smaller programs, particularly given that we responded to every call, regardless of whether the patient was actively suicidal. This study highlights the importance of training on what constitutes a suicidal crisis for all providers within our healthcare system. The benefit of using a crisis pager (or similar system) is that healthcare providers feel supported and know who to contact when a patient expresses SI. Additionally, we found that this system allowed psychologists to share the caseload of crisis patients. We encourage other healthcare systems to evaluate our model and determine if a variation of it would be feasible within their settings.

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FEELING CALM AND PEACEFUL AMONG INDIVIDUALS AT HIGH RISK OF HOSPITALIZATION: THE ROLE OF AGE, GENDER, AND SELF-REPORTED HEALTH

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Background: As adults age, they experience more positive and less negative emotions (e.g., feeling calm and peaceful) and better regulate their mood. Although these constructs have been studied with healthy older adults, it is important to study this among adults at high risk of hospitalization, given that hospitalization and chronic illness can elevate stress, which can negatively impact health. This study evaluated, among adults at high risk of hospitalization, the relation between feeling calm and peaceful and patients' health over one year.

Methods: Adults ($N=2,000$; Age= 63 ± 16 y; 86% Black; 63% female) who had been hospitalized in the last year or were in the emergency department were recruited for a RCT comparing a hospital-based intervention to standard care. Interviews were completed every three months, which included asking "How much of the time in the past 4 weeks have you felt calm and peaceful?" For this study, responses were grouped into: feeling calm all, most, and a good bit versus some, little, or none of the time; analyses excluded non-responders ($n=15$).

Results: At baseline, 57.6% of participants endorsed feeling calm and peaceful. Men were more likely to endorse feeling calm than women ($p<.001$). Compared to their counterparts, individuals who felt calm were older, had better health ratings, were less likely to be hospitalized in the past year, and endorsed less impairment in activities of daily living (ADL) or instrumental ADL ($ps<.003$); they also endorsed better mental health and fewer depressive and anxiety symptoms, disordered personality traits, and psychosomatic complaints ($ps<.001$). There were no between-group differences in race, ethnicity, income, education level, or number of hospitalizations in the past year ($ps>.19$). Among the subset of participants (68%) who were alive one year after enrollment and reported hospitalizations in each of the follow-ups (responses from which were aggregated into one variable of "future hospitalization"), feeling calm did not predict future hospitalization, controlling for study group and whether individuals were hospitalized in the year prior (OR=0.8; 95% CI=0.6–1.0), and did not significantly differ between study groups at each follow up ($ps>.09$).

Discussion: In this sample, feeling calm and peaceful was associated with older age and better physical and mental health, but did not predict future hospitalizations, a key health outcome. Interventions to help patients at risk of hospitalization feel calm and peaceful more often may be beneficial.

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GENDER DIFFERENCES IN ASSOCIATIONS BETWEEN RESILIENCY AND DEPRESSION AMONG NEURO-ICU CAREGIVERS

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Informal caregivers (CGs) of patients (PTs) admitted to the Neuroscience-ICU are at risk for depression, with repercussions to both CG and PT functioning. Modifiable psychosocial resiliency factors may reduce risk of depression in Neuro-ICU CGs, and these relationships may vary by gender. We tested interactions between gender and modifiable resiliency factors on depression symptom severity cross-sectionally at the time of admission and prospectively through 6-months post-discharge. CGs ($N = 96$; $M_{age} = 53$; 62% female; 87% White) were enrolled as part of an ongoing prospective study in the Neuro-ICU of a major academic medical center. Sociodemographics and resiliency factors (coping, mindfulness, self-efficacy, intimate bond, and preparedness for caregiving) were assessed at PT's admission (i.e., baseline). Depressive symptoms were measured using the depression subscale of the Hospital Anxiety and Depression Scale at baseline, 3 months, and 6 months after patient discharge. Separate ANCOVAs were used to test potential interaction effects between gender and each resiliency variable at each timepoint. At baseline, ANCOVA models revealed main effects for resiliency variables such that greater levels of coping, mindfulness, self-efficacy, and preparedness for caregiving were associated with lower concurrent depressive symptoms (all $ps < 0.026$); these relationships did not differ by gender. At 3 months, greater CG self-efficacy was associated with lower depression regardless of gender ($p = 0.041$). At 3-month and 6-month follow-up, ANCOVAs (controlling for baseline depression) revealed an interaction between CG gender and mindfulness, such that male CGs with high mindfulness demonstrated lower levels of depression than did males with low mindfulness ($p = 0.026$ and $p = 0.013$). Similarly, at 6 months, female CGs with high intimate bond at baseline reported the lowest levels of depression symptoms ($p = 0.020$). CGs are likely to benefit from skills training that improve multiple dimensions of resiliency in the acute stage following a loved one's hospitalization. Gender differences in associations between depression and both mindfulness and intimate bond suggest that tailored programs may be used to address specific modifiable resiliency dimensions among male and female CGs.

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INTRA-COUPLE VARIATION IN PTSD AND NICU VISITATION

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Introduction: Research consistently supports that parental visitation has a positive influence on development of infants hospitalized in a neonatal intensive care unit (NICU). Despite unit efforts to create a family-friendly environment, variation in NICU visitation frequency between and within families persists. Parental psychological distress including symptoms of posttraumatic stress disorder (PTSD) may be related to visitation frequency. Limited research has investigated this relationship and no research has explored intra-couple variation in visitation or PTSD.

Method: Participants: 10 sets of biological parents to infants hospitalized in a NICU for at least two days ($M=51$). Characteristics: 40% married, all cohabitating, $M_{age}=29$ years, 60% White, 80% employed full-time, 50% minimum 2-year college degree, 70% Medicaid. Infants: 90% preterm ($M=31$ weeks), 100% low birth weight ($M=1327$ grams). Survey: Perinatal PTSD Questionnaire and literature-based NICU visitation barriers. Electronic health record abstraction: parent visitation frequency and infant medical history. Significance level of $p=.10$ was used to account for small sample size.

Results: Mothers had higher PTSD scores ($M=11.00$) than fathers ($M=2.70$), $t(11.23)=1.85$, $p=.09$; and visited their baby a greater proportion of days ($M=25.41$) than fathers ($M=21.67$), $t(19)=3.55$, $p=.002$. Paired analyses revealed the same pattern of findings, as well as that mothers reported fewer visitation barriers ($M=1.60$) than their partner ($M=2.70$), $t(8)=2.09$, $p=.07$. Visitation was significantly correlated within couples ($r=.96$, $pr=.26$, $p=.50$), and number of barriers ($r=.45$, $p=.19$) were not. Only among mothers were significant correlations observed between number of barriers and PTSD score ($r=.75$, $p=.019$) and visitation ($r=.67$, $p=.04$). PTSD score and visitation were not correlated among mothers or fathers.

Conclusions: Results indicate that mothers of NICU infants may be at greater risk to experience PTSD, and that they perceive fewer visitation barriers, and visit their baby more often than their partners. Despite perceiving fewer barriers, the barriers mothers reported were positively related to their PTSD scores and visitation. Among mothers, visitation barriers and PTSD symptoms may exacerbate each other; and reporting barriers may be capturing concerns that lead them to visit and/or visiting may highlight barriers. PTSD did not directly serve as a visitation barrier for mothers or fathers.

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6:30 PM-7:30 PM

KEEPING OUR STAFF IN MIND: IMPROVING PHYSICAL FITNESS OF MENTAL HEALTH STAFF THROUGH A PHYSICAL ACTIVITY INTERVENTION

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Background: People with severe mental illness (SMI) have a life-expectancy up to 20 years less than the general population, primarily due to cardiovascular (CV) risk factors. Lifestyle interventions that promote physical activity assist in reducing CV risk for people living with SMI, however implementation of successful programs within mental health care settings are scarce. Staff culture surrounding physical health remains a major barrier to convert research findings into clinical practice. As such, Keeping our Staff in Mind (KoSiM), a staff-focused lifestyle intervention, was delivered to mental health staff members of a local health district in Sydney, Australia with the aim of improving physical fitness, CV risk and staff culture.

Methods: All clinical mental health staff within the district who opted to partake in the KoSiM intervention were offered an initial consultation with an exercise physiologist to discuss physical activity habits and perform goal setting followed by physical fitness testing. Participants were then offered weekly consultations with the exercise physiologist for four weeks with follow-up occurring at week 16. Outcomes assessed included: physical activity levels, aerobic fitness, upper body strength, weight, waist circumference and blood pressure.

Results: In total, 106 staff members participated in the study and prior to beginning the program, 90% of staff had never met with an exercise physiologist. Follow-up aerobic fitness testing was completed by 61 participants with a mean increase in VO_2 max of 2.8ml/min/kg ($p<0.001$). A mean increase of 25.8 minutes to weekly vigorous physical activity occurred in addition to a mean decrease of 110.3 minutes of daily sedentary time ($p<0.001$). Statistically significant reduction in waist circumference was observed, with a mean decrease of 1.9cm ($p<0.001$).

Conclusion: Lifestyle interventions are effective in improving the physical health and fitness of mental health staff. To incorporate physical health interventions within routine care for people living with mental illness a focus on improving staff culture is essential.

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A150

6:30 PM-7:30 PM

MENTAL HEALTH PROVIDER INTENTIONS TO OFFER WEIGHT MANAGEMENT TO YOUTH WITH SERIOUS EMOTIONAL DISTURBANCE AND OBESITY

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Introduction. Youth with Serious Emotional Disturbance (SED) are at increased risk for overweight and obesity (OW/OB). Contributing factors may include psychotropic medication (e.g., Jerrell, 2010) and psychiatric symptoms (e.g., Davis, 2010). While community mental health providers may have the requisite skills to provide weight-related intervention (Barlow, 2007; Garland et al., 2010), little is known about the factors that influence their engagement in this behavior. The Theory of Planned Behavior (TPB; Ajzen, 1991) may guide the identification of variables influencing provider behavior. The purpose of the current study was to create a TPB-based measure to assess factors related to intention to provide weight-related intervention to youth with SED and OW/OB.

Methods. A TPB questionnaire was created from Salient Beliefs identified in a prior elicitation study and edited based on expert feedback. Then, community mental health providers serving youth with SED and OW/OB were recruited via electronic advertisement. A total of 101 providers participated. Participants completed a clinical practice survey and TPB questionnaire. Descriptive characteristics related to clinical practice were obtained. Psychometrics and a Confirmatory Factor Analysis (CFA) examined the properties of the TPB questionnaire. Hierarchical multiple linear regression assessed associations between TPB constructs and providers'; behavioral intentions.

Results. A majority of participants were Licensed Professional Counselors. Approximately 66% ($SD = 34.3$) of their caseload has SED. Participants identified a lack of training in weight-management techniques, and less than half reportedly provide weight-related intervention. The questionnaire showed adequate reliability ($\alpha = 0.72 - 0.84$) and CFA confirmed model fit (e.g., Standardized Root Mean Square Residual = 0.07). Several Direct Attitude constructs predicted intention to provide weight-related intervention. The overall regression model accounted for 67% of the variance in intention, with Subjective Norms ($B = .20$, $SE = .10$, $p < .05$), Perceived Behavioral Control ($B = .19$, $SE = .07$, $p < .01$), Role Beliefs ($B = .25$, $SE = .10$, $p < .01$), and Moral Norms ($B = .43$, $SE = .09$, $p < .05$) as significant individual predictors.

Conclusions. The TPB is a useful model from which to understand and augment provider attitudes toward weight management in the service of improving overall health and wellness of youth with SED and OW/OB.

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RACIAL DIFFERENCES IN THE IMPACT OF INTERPERSONAL TRAUMA ON EATING DISORDERS, SUBSTANCE ABUSE, AND PTSD IN FEMALE VETERANS

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Objective: Exposure to potentially traumatic events (PTEs) has been linked to deleterious impacts on health, both mentally and physically. PTEs of an interpersonal nature have been found to have profound impacts on well-being and health behaviors. The purpose of the present study is to examine the impact of interpersonal trauma (e.g., sexual and physical assaults) and self-identified race on eating, substance use, and PTSD-related behaviors in a sample of diverse women veterans.

Method: Participants were women veterans aged 18–70 who utilized VA medical center services, without psychotic disorders or suicidal ideation ($N = 407$). In a survey-based cross-sectional study, we used univariate descriptive statistics and logistic regression analyses to determine the associations between psychopathology, interpersonal trauma exposure, and race/ethnicity.

Results: Those with an experience of physical and/or sexual violence ($n = 154$) were compared to those without interpersonal trauma experience ($n = 253$). Both groups were diverse in terms of race/ethnicity with 40% identifying as non-White or Caucasian as well as military background. It was found that, compared with those who did not experience trauma, participants with interpersonal trauma exposure had a 4.34-fold increase in the odds (95% CI: 2.69–7.01) of meeting the criteria for PTSD diagnosis, and had a 2.39-fold increase in the odds (95% CI: 1.33–4.28) of having any eating disorder (e.g., bulimia, anorexia, binge eating disorder). Compared to White female veterans, Asian women had a 3.74-fold increase in the odds (95% CI: 1.38-10.16) of having any eating disorder. Experiencing interpersonal trauma was not associated with substance use disorders in the present sample.

Limitations: The current study utilized self-report and was cross-sectional. Additionally, the results may not be generalized to veterans who have not utilized VA medical center services.

Conclusions: Experiencing interpersonal trauma is associated with eating disorders and PTSD diagnoses, suggesting that targeted mental health screening efforts may be helpful. Consideration of racial/ethnic difference among female veterans seeking health care at the VA can also facilitate more targeted prevention and treatment services.

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THE ASSOCIATION BETWEEN ASPECTS OF SOCIAL SUPPORT AND DEPRESSIVE SYMPTOMS AMONG PERMANENT SUPPORTIVE HOUSING RESIDENTS

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Background: Depression is a significant public health issue that disproportionately affects underserved and low-income populations. Previous research tends to show an association between social support and depressive symptoms. However, there are multiple aspects of social support, and the type of support that is associated with depression in underserved populations is unclear. Understanding the type(s) of social support associated with depression can help guide mental health interventions in this population. Therefore, the purpose of this study was to assess the association between three dimensions of social support (i.e., appraisal, tangible, and belonging) and depressive symptoms.

Methods: Baseline data was analyzed from 420 adults participating in m.chat, a technology-assisted health coaching program for people with mental health symptoms, residing in permanent supportive housing in Ft. Worth, TX. Social support was measured using a modified version of the Interpersonal Support Evaluation List (ISEL), and depressive symptoms were measured using the Patient Health Questionnaire (PHQ-9). Multiple linear regression was used to assess the influence of three aspects of social support (i.e., appraisal, tangible, and belonging) on depressive symptoms, adjusting for age, gender, ethnicity, marital status, diet, physical activity and smoking years.

Results: An increased sense of belonging was significantly associated with reduced depressive symptoms ($p = 0.0029$). However, there was not a significant association between appraisal ($p = 0.0846$) or tangible ($p = 0.3729$) social support and depressive symptoms.

Conclusions: Increasing perceptions of tangible (e.g., availability of help or assistance) and appraisal (e.g., availability of advice or guidance) dimensions of social support may have less influence on depressive symptoms. Mental health interventions among underserved populations may improve their effectiveness in reducing depressive symptoms by focusing on increasing a sense of belonging (e.g., group affiliation or inclusion) among participants.

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PROGNOSTIC UNDERSTANDING: PERSPECTIVES OF ADVANCED CANCER PATIENTS

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Background: Comprehensive health information is one of the most important decision-making tools that can be provided to advanced cancer patients. However, research shows that nearly 50% of cancer patients do not fully understand their prognosis. Lack of prognostic awareness has been linked to a range of psychosocial and medical outcomes including unnecessary and unwanted hospital admissions, deaths in acute care settings, late referral to palliative care services, poor symptom control, insufficient end of life planning, increased depression and anxiety, and ultimately reduced patient autonomy.

Despite the importance of prognostic understanding, research efforts have been hindered by the lack of a systematic, structured assessment of prognostic understanding. This study implemented a Thematic Content Analysis framework to characterize prognostic understanding in the advanced cancer setting.

Method: 28 advanced cancer patients participated in semi-structured interviews which focused on identifying the breadth of factors underlying prognostic understanding. Three independent raters utilized a Thematic Content Analysis framework for data reduction, to identify core themes that reflect unique aspects of prognostic understanding.

Results: Participants were 64% female ($n = 18$) and had a mean age of 59 ($SD = 13.1$). The sample was ethnically diverse: 36% Caucasian, 36% Hispanic, and 28% African American. 50% ($n = 5$) of the patients who identified as Hispanic were monolingual Spanish speakers. Thematic Content Analysis discovered 5 overarching themes related to prognostic understanding: understanding of current state of disease (100%), understanding of prognosis (100%), preferences for information (96%), communication (79%), and medical uncertainty (25%). Additionally, 21 specific facets of information were identified within each overarching theme. Patients most commonly reported the goal of their treatment (89%), the stage of their disease (75%), their treatment regimen (64%), their response to treatment (64%), and the importance of receiving prognostic information (64%).

Conclusions: Thematic Content Analysis results demonstrated 5 overarching themes and 21 specific facets of information related to prognostic understanding. These results illustrate the multidimensional nature of prognostic understanding and support the development of a comprehensive, multi-faceted assessment tool to assess this important construct. Future research initiatives should focus on the development and pilot testing of such a measure that can be utilized to better understand the phenomenology of prognostic understanding and its'; correlates in the context of advanced cancer.

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AN EXAMINATION OF THE FULD OBJECT MEMORY EVALUATION IN ASSESSING EPISODIC MEMORY AND RETRIEVAL IN CHINESE ELDERLY

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Introduction: Mild cognitive impairment (MCI) refers to an early but abnormal state of cognitive impairment between normal ageing and dementia (Petersen et al., 1999). Fuld Object Memory Evaluation (FOME) assesses the episodic memory functions of older adults across five recall trials and a delayed trial. Research Design: This study evaluated the psychometric properties of FOME in a sample of 204 Chinese older adults with cognitive impairments in Hong Kong. Discriminative power of FOME was inspected via receiver operating characteristic curve analysis.

Results: FOME showed good test-retest reliability and significant correlations with backward digit span, trail making and daily functioning. Total retrieval and verbal fluency significantly predicted lower likelihoods of dementia comparing to MCI, with optimal cut-off scores at 36 (75% sensitivity, 79% specificity) and 27 (91% sensitivity, 69% specificity), respectively.

Conclusions: The findings support FOME as a clinically valid assessment tool of various degrees of cognitive impairment in older Chinese adults. Future studies could further examine the predictive power of FOME in differentiating cognitively normal elderly from both MCI and dementia cases.

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ASSESSING PHYSICAL ACTIVITY IN PEOPLE WITH MENTAL ILLNESS: VALIDATION OF THE SIMPLE PHYSICAL ACTIVITY QUESTIONNAIRE (SIMPAQ)

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Background: Physical inactivity is a key contributor to the global burden of disease. However, insufficient physical activity disproportionately affects vulnerable populations such as those experiencing mental illness, despite increases in physical activity being associated with improvements in symptoms of mental illness in addition to a reduction of cardiometabolic risk. Ensuring valid and reliable clinical tools are available to assess physical activity within clinical mental health settings is of clear significance.

Methods: Between 2014 and 2016 the International Working Group developed the five-item SIMPAQ as an instrument to assess physical activity and sedentary behaviour among populations at risk of engaging in high levels of sedentary behaviour. During 2016/2017, 42 centres from 23-countries collected reliability and validity data on the SIMPAQ from patients with mental illness. Test-retest repeatability was assessed one-week apart. Criterion SIMPAQ validity was assessed against the Actigraph Gt3x accelerometer. Spearman's correlation coefficients will be reported.

Results: Data collection was completed in July 2017. N=1,059 participants were recruited from 42 centres across 23-countries including representation from lower-middle (India n=72, Nigeria n=10, Pakistan n=95), upper-middle (Brazil n=34; Iran n=47) and high-income countries (Australia n=150; Belgium n=35; Canada n=30; Chile n=18, Czech Republic n=8; Denmark n=23; Germany n=67; Hong Kong n=13; Ireland n=23; Italy n=117; Japan n=19; Netherlands n=20; Norway n=20; Portugal n=15; Spain n=36, Switzerland n=157; Taiwan n=37; USA n=13).

Conclusion: The validity and reliability of the SIMPAQ as a clinical measure to assess physical activity and sedentary behaviour among a diverse sample of people with mental illness will be reported.

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COMPARING HEALTH BEHAVIOR RESEARCH FINDINGS FROM CONVENIENCE AND PROBABILITY SAMPLES

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Background. Online convenience samples are a quick and low-cost way to study health behavior, but the comparability to findings from probability samples is not yet well understood.

Purpose. We sought to compare convenience and probability samples'; findings for experiments, associations, and prevalence in the context of health behavior research.

Methods. Participants were a probability sample of 5,014 US adults recruited by phone from September 2014 through May 2015 (cost ~ \$620,000 US) and an online convenience sample of 4,137 US adults recruited through Amazon Mechanical Turk (MTurk) in December 2014 (cost ~ \$17,000 US). Participants completed a survey with experiments, measures of tobacco product use, and demographic characteristics. We compared the statistical significance and direction of experimental findings, and statistically compared estimates for non-experimental associations and prevalence.

Results. MTurk convenience and probability samples showed the same pattern of statistical significance and direction in almost all experiments (19 of 22 analyses did not differ) and non-experimental associations (19 of 25 associations did not differ). Demographic characteristics of the samples differed substantially (1 of 17 estimates did not differ), with the convenience sample being younger, having more years of education, and including more Whites and Asians. Tobacco product use also differed substantially (1 of 22 prevalence estimates did not differ), with the convenience sample reporting more cigarette and e-cigarette use (median error 19%).

Conclusions. Using MTurk to recruit convenience samples can be a low-cost method that yields generalizable findings for experiments and association in the context of health behavior research. Prevalence estimates from MTurk convenience samples are likely to be over- or underestimates and should be interpreted with caution.

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MERITORIOUS AWARD WINNER

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COMPARISON OF SINGLE AND DUAL FREQUENCY BIA WITH SKINFOLD CALIPERS FOR MEASUREMENT OF BODY COMPOSITION IN HISPANIC WOMEN

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Background: Bioelectrical impedance (BIA) is a common, convenient, and less invasive method to measure body composition (BC) compared with the more accurate and invasive method of skin fold testing. BIA measures BC by capturing the speed at which a current travels through the body. A single frequency (SF) current has been the industry standard, but more recently dual frequency (DF), which uses two currents at different speed, has become available. The purpose of this study was to examine the criterion validity of SF and DF BIA scales, with BC measured by skinfold calipers, among Hispanic women.

Methods: Hispanic mothers ($N=14$), age 30.8 ± 6.0 years old, with a mean BMI of $31.3 \pm 8.2 \text{ kg/m}^2$ (Range= 27.0 , min= 21.5 , max= 48.5), were measured twice consecutively by SF BIA, DF BIA, and skinfold calipers. Three site skinfold measures were taken (triceps, suprailliac, and abdominal) by trained assessors, and Hispanic specific BC equations were used to determine percent body fat. Intra-rater and inter-rater reliability were calculated between measures. Bland-Altman plots were used to examine agreement of each BIA measure with skinfold calipers.

Results: Intra-rater reliability was perfect between measurements of SF and DF BIA ($\alpha=1.0$), while sum of skinfolds was only slightly lower for triceps ($\alpha=.994$), suprailliac ($\alpha=.971$), and abdominal ($\alpha=.920$) sites. DF ($M=39.5 \pm 7.5$) and SF ($M=39.4 \pm 7.5$) measures were highly correlated ($r=.884$; $p<.001$) and had an absolute mean difference of $3.1 \pm 1.7\%$ (Range= 5.3 , min= $.7$, max= 6.0). Body fat caliper measures ($M=39.6 \pm 7.6$) were more strongly correlated with SF ($r=.889$; $p<.000$) measures than DF ($r=.830$; $p=.002$) measures and had a smaller absolute mean difference ($3.1 \pm 2.1\%$; Range= 6.35 , min= $.07$, max= 6.42 vs. $3.3 \pm 3.1\%$; Range= 8.71 , min= $.02$, max= 8.73). Bland-Altman plots revealed that SF BIA had a smaller confidence interval than DF (-5.5 through 8.7 vs. -7.8 through 10.0), but a less accurate point estimate (1.6 vs. 1.1).

Conclusion: Although the differences between SF and DF BIA appear to be small when compared with skin folding calipers, the SF BIA has stronger criterion related validity in Hispanic women and has similar measurement value compared to DF BIA, at a lower cost. We recommend further research investigate the value of DF BIA across other populations and compare with more precise measures of body composition (dual energy x-ray absorptiometry, underwater weighing) before researchers invest in DF technology.

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EFFECTIVENESS OF SOCIAL MEDIA APPROACHES TO RECRUITING YOUNG ADULT LITTLE CIGAR SMOKERS

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Background: The popularity of social media (SM) among young adults suggests the use of these platforms for study recruitment of this age group. SM is used in large numbers by low-SES individuals and minorities, indicating it also may be an effective strategy for reaching individuals more difficult to recruit with traditional strategies. Previous studies have examined the use of SM for study recruitment, but few have compared recruitment rates across different platforms, and none to our knowledge have recruited little cigar and cigarillo (LCC) users.

Objective: To examine the effectiveness of different SM platforms and advertisement images for recruiting 14–28 year old LCC users to complete an eligibility screener for an LCC use survey.

Methods: We obtained data for advertisement impressions, costs, and engagements from Facebook and Twitter advertising management platforms for a two-month recruitment campaign in 2017. Advertisements were targeted to age group (14–28 years old), geography (Cleveland and Baltimore), and interests (e.g., Tobacco smoking). Advertisement effectiveness was defined as the percentage of completed screeners per impression. Chi-square tests were used to compare the rate of completed screeners per impression across social media platform and advertisement types.

Results: Screener completers ($n=1,913$) reported a mean age of 26 years. Of the screener completers who completed the LCC use survey ($n=393$), 51% identified as male, 34% as African American, and 8% as Hispanic. The campaign delivered 1,237,721 impressions with a cost of \$5.31 per completed and \$11.19 per approved screener. Advertisements delivered via Facebook/Instagram were more effective than Twitter (.19% vs. .14%, $\chi^2(1, N=1,237,721) = 41.22, p < .0001$). Across platforms, ads featuring exclusively an image of a little cigar were more effective (.39%) than ads with images of an individual smoking (.13%), an individual not smoking (.10%), or a group of individuals not smoking (.10%), $\chi^2(3, N = 1,237,721) = 886.80, p < .0001$.

Implications: The 2-month advertising campaign was effective in recruiting a diverse sample of young adults representative of racial/ethnic categories. Cost effectiveness of the campaign was similar to other tobacco SM recruitment campaigns, which have reported costs of \$8.80 per consent and \$4.37 per eligible participant. Advertisements on Facebook/Instagram were more effective than Twitter. Given our inability, however, to determine how many individuals in the sample use both, it may be that using multiple platforms remains the optimal recruitment strategy. Including a cigarillo image in advertisements was consistently the most effective advertisement design and should be considered by others recruiting LCC users via SM.

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EVALUATING THE REPRODUCIBILITY OF AMBULATORY BLOOD PRESSURE VARIABILITY

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Ambulatory blood pressure (ABP) involves repeated measurements of BP in one's environment. Averages of these measurements predict cardiovascular disease and mortality. Yet, there is a growing recognition that oscillations in ABP – ABP variability – may be associated with cardiovascular risk independent of ABP mean. However, it is unclear if ABP variability is stable over time, which would help determine its importance as a risk factor and potential treatment target. The goal of the study was to examine the reproducibility of ABP variability across two observational, longitudinal studies. Participants were recruited from the New York City area. SpaceLabs ABP monitors were used to collect ABP readings over multiple 24-hour periods: three times, one month apart in Study 1; and twice, up to four months apart in Study 2. Readings were taken every 30 minutes in Study 1 and every 20 minutes in Study 2. Study 1 included 295 participants (55.3% female; $M \pm SD_{age} = 50.2 \pm 15.2$; 30.3% Black; 43% hypertensive). Study 2 included 282 participants (53.2% female; $M \pm SD_{age} = 39.3 \pm 11.2$; 56.6% Black; 4.2% hypertensive). ABP mean and variability (defined as the standard deviation) were calculated for daytime (6am-10pm) and nighttime (10pm-6am) periods. Bivariate and partial correlations (adjusted for age, sex, race, and body mass index) were conducted between each of the ABP sessions, separately for systolic BP (SBP) and diastolic BP (DBP). ABP mean was highly reproducible for daytime and nighttime SBP and DBP in both studies ($r_s > .66$). For variability, in Study 1, moderately strong relationships were found for daytime SBP and DBP ($r_s > .36$). Nighttime ABP variability sessions one month apart were related ($r_s > .45$), but the sessions two months apart did not have significant relationships. In Study 2, with sessions four months apart, no significant relationships were found for daytime and nighttime SBP and DBP variability, except daytime DBP ($r = .22$). Similar findings were observed in adjusted analyses. Results of the study are consistent with the evidence that ABP is consistent over time. Yet, ABP variability tended to be only reproducible with measurements closer in time, suggesting that ABP variability reflects changes in response to one's environment. These findings highlight the critical role of timing between the ABP measurement periods and support the notion that ABP variability is independent to ABP mean.

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IDENTIFYING HEALTH BEHAVIOR CHANGE MECHANISMS: CHALLENGES FACED IN A META-REVIEW OF META-ANALYSES

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An overwhelming body of primary study and systematic review literature evaluates health behavior interventions. Meta-reviews (i.e., overviews), can synthesize this literature to improve its utility in basic and applied health sectors; yet, a synthesis is only useful if it identifies new themes across the literature that single reviews could not, by, for example, focusing on identifying effective components of behavioral interventions instead of simply validating intervention effectiveness. However, a limitation of overviews is that important nuances of behavior change interventions can be difficult to address, especially when seeking details from meta-analytic literature, which is once removed from the primary studies represented.

The aim of this presentation is to address the methodological challenges and opportunities involved in conducting a comprehensive and systematic overview of meta-analyses that have appeared since 2006 that examine self-regulation mechanisms driving behavior change interventions across a broad range of health behaviors linked to chronic diseases. Specifically, this overview seeks to identify tests of putative target mechanisms involved in health behavior change, permitting conclusions about whether an intervention is effective, as well as why it works, and at the same time documenting whether these conclusions rest on high quality review methods. By identifying key individual-level mechanisms of health behavior change, this overview promises to identify and evaluate the mechanisms by which interventions improve health behaviors, which ultimately should reduce the burden of chronic disease.

Due to the broad review scope, 12,326 abstracts from 7 electronic databases were identified as potentially eligible. The methodological challenges identified include: setting the review scope, developing and utilizing a logic model, selecting appropriate search terms and strings, and choosing literature sources. We discuss practical opportunities that emerge in addressing these challenges. Mechanisms addressed in a sample of the current review literature are presented to illustrate what to expect when conducting such a broad literature synthesis and how to use a logic model to guide the analysis and presentation of results (e.g., determining which domains of research are most in need of new, high-quality systematic reviews). The overview promises to leverage the extensive work that past meta-analysts have put into their systematic reviews.

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ONLINE RECRUITMENT AND RETENTION METHODS FOR HIV PREVENTION RESEARCH AMONG ADOLESCENT MALES INTERESTED IN SEX WITH MALES (AMSM)

Kimberly Nelson, PhD, MPH¹, Jaime J. Ramirez, BA², Michael Carey, PhD¹¹Brown University, Providence, RI; ²Centers for Behavioral and Preventative Medicine, The Miriam Hospital, Providence, RI**BACKGROUND:** Adolescent males interested in sex with males (AMSM) are an important audience for HIV prevention interventions but they are difficult to reach due to their age and social stigma. We sought to identify efficient methods to recruit and retain AMSM in online research.**METHODS:** Interviews with AMSM ($N=16$; ages 14–18; 50% racial/ethnic minority; 69% gay-identified; 75% sexually active in the last year) were conducted at 2017 Pride events in Boston, MA and Providence, RI. Interviews took approximately 20 minutes and covered topics including social media website and phone application (“app”) use, where to advertise online, what to include in online advertisements, and potential methods to increase retention in longitudinal studies conducted online.**RESULTS:** AMSM participants reported that they used Facebook (94%), YouTube (88%), Snapchat (81%), and Instagram (81%). Instagram (75%), Snapchat (69%), and Facebook (63%) were identified as the best websites/phone apps to advertise on. Participants said online advertisements should include a brief description of the study with short phrases and bullet points (63%), colorful and bright pictures (56%), compensation details (56%), and familiar/comfortable words (50%). The majority (56%) would complete a 10–20 minute survey. Information about compensation (69%), the length of surveys (63%), and what kinds of questions would be asked (63%) were identified as important information to provide. The majority said that sending reminders between study activities (94%) and providing compensation (75%) would increase retention. Participants preferred an email gift card (69%). More than half (56%) said that \$10–\$20 is fair compensation for a 30 minute online survey.**CONCLUSIONS:** These results can inform recruitment and retention procedures in online HIV prevention research targeting AMSM. Designing procedures with the input of the target audience (i.e., AMSM) will increase the efficiency, reach, validity, and scientific yield of HIV prevention research. This yield, in turn, can facilitate the development of online HIV prevention interventions that address HIV disparities among this at-risk group.**CORRESPONDING AUTHOR:** Kimberly Nelson, PhD, MPH, Brown University, Providence, RI; kimberly_nelson_1@brown.edu

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PICKING UP THE PACE: THE CASE FOR MIXED METHODS PSYCHOMETRIC RESEARCH IN PHARMACEUTICAL CLINICAL TRIALS

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The patient perspective is now a central element in the evaluation of new therapies in pharmaceutical clinical trials. The increasing requirement of well targeted, fit-for-purpose patient-centered outcome measures (PCOMs) in a fast-moving industry has necessitated a rethink in methodology to develop and evaluate instruments.

Traditional psychometric research entails a three-step approach: item generation (usually involving qualitative research), followed by a first field test (to reduce the number of questions and form scales), followed by a second field test (to establish psychometric properties). The field tests are quantitative in nature. This linear approach usually takes a long time to complete and is risky. This is because qualitative methods alone cannot tell us about the extent to which concepts are measurable including: how well targeted the questions are to the type and range of issues experienced by patients; how well the questions work together as a set; and whether the response options are working as intended. Conversely, quantitative methods alone cannot tell us which concepts should be, and/or are purported to be, measured.

Mixed methods psychometric research provides an alternative approach to developing PCOMs. It requires an iterative, hypothesis-based, experimental approach to provide early empirical evidence about the relevance of the concepts under scrutiny, as well as the extent to which the questions are matched to the study sample, identify potential gaps in measurement, and provide key information about the adequacy of the response options. The synthesis of qualitative and quantitative data strengthens the development process and can lead to various actions such as revisiting the qualitative data, conducting more qualitative research, or providing confidence to take the next steps.

We illustrate these methods via a case study using the ABILHAND-56, a PCOM of manual ability, in a sample of patients with Multiple Sclerosis (MS, $n=118$). This mixed methods psychometric study focused on improving the targeting and sensitivity of the ABILHAND by adding new, targeted bolt-on items. Our findings suggested the ABILHAND provides better interpretable data when considered as a two-subscale instrument (i.e., Fine Motor and Power). Also, adding 20 additional items improved targeting, leading to a reduced ceiling effect, better precision, and therefore a more fit-for-purpose instrument to measure clinical change in future clinical trials.**CORRESPONDING AUTHOR:** Jessica Markowitz, PhD, Modus Outcomes, Cambridge, MA; jessica.markowitz@modusoutcomes.com

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RESILIENCE RESOURCES SCALE (RRS): A NEW RESILIENCE MEASURE FOR ADOLESCENTS AND EMERGING ADULTS

Melissa Julian, B.A.¹, Alyssa C.D. Cheadle, Ph.D.², Robert M. Bilder, Ph.D.¹, Kendra S. Knudsen, B.S.¹, Christine Dunkel Schetter, Ph.D.¹¹University of California, Los Angeles, Los Angeles, CA; ²Hope College, Holland, MIResilience resources are defined as resources that promote the capacity to withstand and cope with demands while maintaining healthy functioning in various life domains. These resources are important to evaluate in the context of adolescence and emerging adulthood when navigating unique risks and new opportunities can have a significant impact on mental and physical health. Thus, it is crucial for researchers to be able to effectively assess the pertinent resilience resources during this developmental period. This study addresses the reliability, validity, and factor structure of the Resilience Resources Scale (RRS), a new 12-item self-report questionnaire briefly measuring multiple resources that contribute to resilience capacity. The scale's items assess self-esteem, mastery, optimism, familism, spirituality, and social support seeking skills which represent the majority of the most frequently cited resilience resources associated with both mental and physical health in adolescents and adults. The analytical sample included 295 undergraduate students who participated in the UCLA Stress and Resilience Assessment (SARA) Project. Participants either completed the RRS at one of two time points eight weeks apart ($n = 193$), or at both time points ($n = 102$). The factor analysis results provide evidence for a single factor structure and the scale's internal consistency was high ($\alpha = 0.90$). For the subset who took the instrument twice, the mean scores showed strong agreement with an intra-class correlation coefficient of 0.74 ($p < .001$, 95% CI [.64, .82]). Results indicated total scores on the resilience scale at the first time point were significantly correlated with standardized measures of life satisfaction ($r = .65$, $p < .001$), positive affect ($r = .64$, $p < .001$), depression ($r = -.64$, $p < .001$), anxiety ($r = -.39$, $p < .001$), and negative affect ($r = -.51$, $p < .001$) at the second time point as expected, indicating good predictive validity. In sum, the RRS has sound psychometric properties and can be used to evaluate core psychosocial resources that contribute to the construct of resilience in adolescence and emerging adulthood.**CORRESPONDING AUTHOR:** Melissa Julian, B.A., University of California, Los Angeles, Los Angeles, CA; mjulian@psych.ucla.edu

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UNC PERCEIVED MESSAGE EFFECTIVENESS SCALE (UPMES): DEVELOPMENT AND VALIDATION OF A BRIEF SCALE

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Introduction: Perceived message effectiveness (PME) is a common metric for identifying promising health messages, but standardized measures are few, lengthy, and assess constructs distal to behavior. We sought to establish the psychometric properties of the UNC Perceived Message Effectiveness Scale (UPMES) in the context of messages about the harms of chemicals in cigarette smoke.

Methods: Participants were a national convenience sample of 999 adults and national probability samples of 1,692 adults and 869 adolescents, recruited in 2015. Participants included smokers and nonsmokers who rated 10 brief messages. The UPMES has three items: “This message makes me concerned about the health effects of smoking”; “This message discourages me from wanting to smoke”; and “This message makes smoking seem unpleasant to me”. Response options ranged from “strongly disagree” to “strongly agree”.

Results: Results were similar across samples and messages. The UPMES was strongly unidimensional across the brief messages (all factor loadings ≥ 0.75). The scale had high reliability ($\alpha \geq 0.85$) over a large standardized range of PME scores (range $z = -3$ – 0.5), indicating a ceiling effect. The UPMES demonstrated convergent validity through very strong correlations with the established Davis Perceived Message Effectiveness Scale (average $r = 0.83$) and strong correlations with message credibility (average $r = 0.57$), and discriminant validity through a modest correlation with message reactance (average $r = -0.47$). The scale did not exhibit appreciable differential test functioning by education, sex, or smoking status (range Cohen’s $d = -0.1$ – 0.1).

Conclusions: The UPMES reliably and validly measures PME among adults and adolescents who differ on demographic characteristics that influence smoking disparities. The scale’s wording is general enough that it may be suitable for use in developing short messages for other risk behaviors.

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VALIDITY OF THE DAILY MINUTES OF UNPROTECTED SUN EXPOSURE (MUSE) INVENTORY

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Rates of skin cancer, including melanoma, continue to increase, indicating a need for more research and interventions targeting daily sun protection. To support these efforts, we developed the Daily Minutes of Sun Exposure (MUSE) Inventory. On the Daily MUSE, participants are asked to report their sun protection during specific self-reported activities. These responses yield several useful metrics on sun exposure, including total outdoor time, percentage of outdoor time particular sun-protection strategies are used, and, uniquely, duration of sun exposure received on various body sites, regardless of the method(s) of sun protection used. The present study provides initial validation data for the Daily MUSE among a sample of melanoma survivors who were asked to complete the daily MUSE for 10 consecutive days while wearing a UV sensor to objectively assess time outdoors. Following the 10-day study, participants completed the widely-used Sun Habits Survey.

On the Daily MUSE, participants ($N=31$, mean age=58.63, $SD=13.01$, 64.5% female) reported an average of 89.66 daily minutes outdoors ($SD=108.24$). Using multilevel modeling on the daily-level data, analyses showed that outdoor time reported in the Daily MUSE predicted outdoor time recorded by the UV sensor, $B=.54$, $p<.001$. Next, the percentage of outdoor time each particular sun protection habit was reported in the Daily MUSE during the 10-day study was calculated; a series of bivariate correlation analyses assessed the association between these MUSE percentages and corresponding items in the Sun Habits Survey. MUSE percentages were significantly correlated with the corresponding items from the Sun Habits Survey for wearing hats, sunscreen, a shirt with sleeves, and sunglasses, ($r_s=.53$ – $.90$, $p<.05$). MUSE percentage for shade use was not significantly associated with the Sun Habits measure of shade use, $r=-.01$, $p=.13$, which suggests that this sun protection habit may be more difficult to recall over a longer interval than at the end of the day. In summary, the Daily MUSE corresponds with an objective measure of exposure and a widely-used survey of sun habits, but differs from these measurement approaches because it will ultimately provide sun exposure scores which account for multiple, potentially overlapping methods of protection. We expect this new metric to be useful for both assessing and delivering feedback regarding change in sun exposure over time in melanoma survivors and other high-risk populations.

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PREDICTORS OF DIET QUALITY AND PHYSICAL ACTIVITY IMPROVEMENTS IN A WEIGHT LOSS PROGRAM FOR OVERWEIGHT VETERANS WITH PTSD

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Background: Post-traumatic stress disorder (PTSD) is a risk factor for obesity. Because VA's weight loss program MOVE! is less effective for Veterans with PTSD, we developed MOVE!+UP, a 16-week weight loss program for Veterans with PTSD. MOVE!+UP is delivered in group and phone sessions by a peer support counselor. MOVE!+UP participants only lost an average of 1.8 pounds at 16 weeks. To inform changes that will help future MOVE!+UP participants lose weight, this study examines predictors of improved diet quality and physical activity among MOVE!+UP pilot participants.

Methods: We piloted MOVE!+UP among four cohorts of overweight Veterans with PTSD (12/2015–6/2017; N=34). Using established measures, we assessed diet quality and physical activity outcomes, and psychological (e.g., self-efficacy), behavioral (e.g., eating habits such as overeating), and social support predictors. We identified associations of baseline-to-16-week change in predictors with baseline-to-16-week changes in diet and physical activity. Associations ($p < .05$) in unadjusted linear regressions were included in multivariable linear regression models.

Results: Diet quality improved significantly but changes were modest (Mean improvement=2.6 (SD=3.7) on a 16-point scale). Conversely, physical activity changes were substantial (Mean increase=280 weekly minutes (SD=774)) but non-significant ($p = .09$). Improved self-efficacy for healthy eating, eating habits, perceived neighborhood support, using healthy eating behavioral strategies, and social support for healthy eating were associated with improved diet quality in unadjusted models. The latter two were independently associated with improved diet in multivariable analysis. Improved self-efficacy for physical activity, using physical activity behavioral strategies, and perceived neighborhood support were associated with improved physical activity in unadjusted models. None were independently associated with improved physical activity. We also found PTSD symptoms improved significantly at 16 weeks, by an average of 6.6 points, nearing the 10-point clinically meaningful threshold.

Conclusions: MOVE!+UP must be modified to better target activity and diet in order to help overweight Veterans with PTSD lose weight. Enhancing how MOVE!+UP targets self-efficacy, habits and behavioral strategies, and social support may improve weight loss outcomes produced by MOVE!+UP and other similar programs. Integrating MOVE!+UP into PTSD care may also help treat PTSD. Thus, if MOVE!+UP's effectiveness is optimized, this may be an efficient way of enhancing mental and physical health functioning among overweight Veterans with PTSD.

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PRELIMINARY ANALYSIS OF THE IMPACT OF PROBLEM-SOLVING TREATMENT ON SUICIDAL IDEATION AMONG VETERANS WITH CHRONIC PAIN.

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Introduction: Every day 20 Veterans die from suicide. Suicide prevention treatments are primarily delivered in mental health care settings, and yet 70% of patients at high suicide risk do not seek mental health treatment. Patients with chronic pain (half of Veterans in the VA) have a 3-fold increased risk of attempting suicide and approximately 75% of male Veterans with chronic pain do not use mental health care, and yet are frequent users of primary care for their pain. This represents an unmet opportunity to integrate suicide prevention into chronic pain treatment.

Method: Problem-solving treatment is an evidenced-based behavioral therapy for chronic pain that teaches patients skills in finding solutions to difficult issues. We are currently conducting a randomized controlled trial of problem-solving therapy for Veterans with chronic pain with the goal to improve disability. Suicidal ideation was measured to characterize the sample. We conducted preliminary analysis to determine if there was evidence to support conducting a follow-up clinical trial to specifically target reduced suicidal ideation.

Results: Of the 193 enrolled Veterans, 110 have completed the 12 week assessment with 32 reporting passive ($n=27$) or active ($n=5$) suicidal ideation at either baseline or 12 weeks. Of these 32 Veterans, 88% had suicidal ideation at baseline. At the end of treatment, 40% ($n=6/15$) of Veterans receiving problem-solving treatment had suicidal ideation as compared to 65% ($n=11/17$) of Veterans in the control treatment ($\chi^2=4.03$, $p=.05$). Among the 32 Veterans with passive or active suicidal ideation at either baseline or 12 weeks, problem-solving treatment reduced the intensity of suicidal ideation. We found reduced intensity of suicidal ideation from 5.92 (SD=3.90) to 2.53 (SD=3.68) after 12 weeks, vs. reduction on the same measure in controls from 6.50 (SD=4.20) to 6.06 (SD=4.92) after 12 weeks, $t=2.3$, $p=.03$.

Conclusions: The findings suggest that problem-solving treatment for chronic pain may also decrease suicidal ideation. Chronic pain interventions are delivered in primary care, rehabilitation clinics and also delivered remotely. Integrating suicide prevention into chronic pain treatments increases points of access to suicide prevention treatment. Our findings suggest the need for a larger trial of problem-solving treatment for Veterans with chronic pain and active suicidal ideation.

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BEHAVIORAL RESPONSES TO GULF WAR ILLNESS: IMPLICATIONS FOR REDUCING DISABILITY AMONG OUR VETERANS

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Background: Medically unexplained symptoms (MUS), including chronic pain and fatigue, are among the most prevalent conditions reported by our veterans. MUS are a particular concern for veterans who served in Operation Desert Shield/Operation Desert Storm, with 25–30% reporting chronic, medically unexplained symptoms collectively known as Gulf War Illness (GWI). This condition can be quite disabling. Behavioral treatments are the primary method to improve disability, however the effect size of these treatments is small to moderate suggesting opportunities to better understand the relationship of behavior to disability. In an effort to more fully examine this relationship, the present study assessed Gulf War veterans' behavioral responses to their GWI, and whether these responses were associated with disability.

Methods: 218 Gulf War veterans with GWI participated in a randomized control trial comparing Problem-Solving Treatment to Health Education. The current study analyzed data from the baseline assessment. Participants completed the Behavioural Responses to Illness Questionnaire (BRIQ) and the WHO Disability Assessment Schedule (WHODAS 2.0). The WHODAS 2 provides an overall disability score and 6 subscale scores.

Results: Participants reported that the most common behavioral responses to their GWI were limiting activity or all-or-nothing behaviors (e.g., pushing themselves until they crash). Few reported seeking emotional support. In terms of the relationship between behavioral responses and disability, regression analyses showed that limiting behaviors ($\beta = .265, p < .001$), all-or-nothing behaviors ($\beta = .189, p < .01$), and seeking practical support ($\beta = .225, p < .01$) were all related to overall disability. These three behaviors were related to higher disability for the subscales of cognition, mobility, engagement in daily activities, and participation in society. Limiting behavior was also associated with disability on the getting along with others subscale, and both limiting behaviors and practical support seeking were associated with greater disability on the self-care subscale.

Conclusion: These results highlight the relationship between behavior and disability among Gulf War veterans with MUS, and suggest that they may be responding to their illness in ways that promote further disability. This has implications for reducing disability among the Gulf War population by teaching veterans more adaptive behavioral responses to their symptoms to support more active engagement in life and society.

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DELIVERING HEALTH BEHAVIOR CHANGE AT SCALE: THE HEALTH HABIT LAB MODEL

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Introduction: Demand for the prevention and treatment of chronic health conditions related to lifestyle is prodigious and growing. Timely delivery of relevant services is both challenging and costly via traditional specialty behavioral health services. Less than 1% of patients for whom health behavior change consultation is appropriate are granted access to appropriate services. Consequently, 80% of the variance in health outcome available for influence by the health system is left unmanaged for a majority of patients. The desire to improve access to care assuming finite human resources gave rise to a Health Habit Lab (HHL) model which provides brief, targeted services that conventionally are available only through sub-specialty clinics.

Methods: The demand for health behavior change consultation was calculated from archival data and used to test candidate service delivery concepts for feasibility under real-world circumstances where consultative expertise is in limited supply. The model which emerged was subsequently subjected to proof-of-concept testing over a period of 8 months and competed against status quo service delivery.

Results: The mean demand for care associated with health behavior change in the family health and internal medicine clinics was observed at 844 appointments per month. Prior to the institution of the HHL, capacity for health-behavior related consultation averaged 169 per month, and evinced a sustained increase of 250% under the new model.

Discussion: Health service delivery in the 21st century is increasingly pressed to do more with less. Consequently, the efficient and effective delivery of the right package of care, to the right patient, at the right time is of paramount importance. The present study revealed a shocking degree of latent demand for health behavior change consultation, and the HHL concept demonstrated promise as a candidate solution to the challenge. As these results are both promising and also preliminary, future efforts to replicate the effect at scale are warranted.

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EXTENDING THE REACH OF PSYCHOLOGY TO GASTROENTEROLOGY CLINICS: VETERAN INTEREST IN INTEGRATED CARE

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Background: Inflammatory bowel disease (IBD) is a chronic relapsing and remitting illness that can significantly impair quality of life (QOL) and increase psychological distress. Among Veterans receiving care at VA hospitals, the prevalence of IBD appears to be increasing. Given the complex medical and psychiatric presentation of many Veteran and IBD patients, VA GI clinics are especially suited for expansion of psychology services. Several studies have outlined potential models for integrated care, but little is known about Veteran interest in utilizing integrated care services.

Objective: This program evaluation activity had three aims: 1) to characterize outpatient GI clinics at two VA hospitals, 2) describe Veterans'; satisfaction ratings with their current GI care, and 3) to determine patients'; interest in having health psychology services available in their GI clinic.

Method: GI clinic patients diagnosed with IBD (N = 107) completed questionnaires reporting their perceived disease activity and satisfaction with their clinic experience. They were also asked if they would like to speak with a health psychologist during their visit and if this should be a service available to other Veterans.

Results: The sample was primarily male (88%), 61 years and older (48%), and white (56%). Fifty-seven percent of Veterans rated their perceived disease severity as moderate to severe while nearly two-thirds endorsed improved overall health and QOL following GI clinic care. Veterans were nearly split about their interest in speaking with a health psychologist at the time of their GI clinic visit, with 47% indicating that they were interested. Reasons for declining included not enough time, too many other health issues to discuss, no current issues, no interest, and current engagement in mental health services (28% of the sample). However, 87% of patients agreed that it would be beneficial to have a health psychologist available in the GI clinic for reasons including: help with managing stress, difficulty in managing a chronic illness and its effect on mood, adjusting after new diagnosis, and support in making lifestyle changes.

Conclusion: Access to psychological services within GI clinics is supported by Veterans and may help them better manage their chronic illness and related psychosocial distress. Given the potential negative impact of IBD on QOL and psychological functioning in Veterans, integrated psychology services in GI clinics should be considered.

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MEDICAL-LEGAL PARTNERSHIPS CAN IMPROVE HOUSING AND PSYCHOSOCIAL OUTCOMES FOR VETERANS WITH MENTAL ILLNESS

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Medical-legal partnerships—collaborations between legal professionals and health care providers that help patients address civil legal problems that can affect health and well-being—have been implemented at several Veterans Affairs (VA) medical centers to serve homeless and low-income veterans with mental illness. We describe the outcomes of veterans who accessed legal services at four partnership sites in Connecticut and New York in the period 2014–16. The partnerships served 950 veterans, who collectively had 1,384 legal issues; on average, the issues took 5.4 hours'; worth of legal services to resolve. The most common problems were related to VA benefits, housing, family issues, and consumer issues. Among a subsample of 148 veterans who were followed for one year, we observed significant improvements in housing, income, and mental health. Veterans who received more partnership services showed greater improvements in housing and mental health than those who received fewer services, and those who achieved their pre-defined legal goals showed greater improvements in housing status and community integration than those who did not. Medical-legal partnerships represent an opportunity to expand cross-sector, community-based partnerships in the VA health care system to address social determinants of mental health.

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POSTTRAUMATIC GROWTH AMONG U.S. VETERANS OVER TIME

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•Posttraumatic growth (PTG) has been found among many people who are exposed to traumatic events, but there have been few prospective studies of PTG, especially among U.S. veterans who are disproportionately exposed to trauma. This study aimed to 1) identify predominant PTG trajectories among veterans over a 4-year period; and 2) examine determinants of PTG trajectories among a comprehensive set of sociodemographic, military, clinical, and psychosocial variables. A total of 2,718 U.S. veterans in the National Health and Resilience in Veterans Study were assessed in 2011, 2013, and 2015. Weights were applied to represent the demographic composition of the U.S. veteran population. Three PTG trajectories were identified, labeled as Low and Decreasing PTG (74.0%), Consistently Moderate PTG (12.0%), and High and Increasing PTG (14.0%). Greater severity of posttraumatic stress disorder symptoms, specifically re-experiencing and avoidance symptoms, at baseline predicted Consistently Moderate and High and Increasing PTG trajectories. Compared to the Low and Decreasing PTG trajectory, the High and Increasing PTG trajectory scored higher on baseline measures of gratitude, purpose in life, spirituality, and social support. In conclusion, PTG is a dynamic process with divergent trajectories. Developing interventions that target certain psychosocial factors may help trauma survivors maintain PTG over time.

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VETERANS LIVING WITH CANCER: DISTRESS AND SUICIDAL IDEATION

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Background: Distress is considered the sixth vital sign in cancer care. It has been related to poor quality of life, treatment non-adherence, and suicidal ideation (SI). Little is known about distress experienced by Veterans with cancer. Due to the increased risk of SI among Veterans, research on factors related to distress and SI among Veterans with cancer is needed.

Objectives: (1) Identify factors associated with distress among Veterans with cancer. (2) Identify relationships between distress and SI.

Methods: Veterans with cancer (N = 111) who were referred for mental health evaluation completed clinical interview and measures of distress (Distress Thermometer and Problems List; DT), pain (Pain Numeric Scale; PNS), insomnia (Insomnia Severity Index; ISI), anxiety (Generalized Anxiety Disorder; GAD7), posttraumatic stress (PTSD Checklist; PCL), and depression (Patient Health Questionnaire; PHQ9).

Results: The most commonly endorsed problems were fatigue (73%), worry (70%), pain (67%), and sleep (67%). Overall, 83% of Veterans screened positive for distress (DT ≥ 4). Positive distress screen was associated with SI ($\chi^2 = 5.609$, $p < .001$). Of the domains on the Problems List, only Family Problems was associated with SI ($\chi^2 = 7.216$, $p = .007$). Positive distress screens were also associated with higher scores on mental health screening measures: PNS ($t = 5.99$, $p < .001$), ISI ($t = 4.43$, $p < .001$), PCL ($t = 4.68$, $p < .001$), GAD7 ($t = 6.84$, $p < .001$), and PHQ9 ($t = 5.42$, $p < .001$). To identify which factors accounted for the greatest proportion of variance in a positive distress screen, logistic regression was performed with PCL, PHQ9, GAD7, ISI, and PNS entered as predictors in separate blocks. Although the omnibus model was significant ($p < .001$), only PNS ($\beta = .288$, $p = .039$) and GAD7 ($\beta = .210$, $p = .049$) significantly contributed to the model.

Conclusion: While SI was associated with positive distress screening, it was the presence of Family Problems, not Emotional Problems, that differentiated those with and without SI. Furthermore, when measures of PTSD, depression, anxiety, insomnia, and pain were all entered in a model predicting positive distress screening, it was only anxiety and pain that remained significant. Although prior studies with Veterans have emphasized the importance of screening for PTSD and depression, current findings highlight the importance of using the DT and Problems List to screen for overall distress among Veterans with cancer.

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ATTITUDES AND PREFERENCES TOWARDS CIVILIAN HEALTHCARE AMONG RESERVE SOLDIERS

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Background and Objective: Given that less than 50% of eligible veterans receive care through the Veterans' Health Administration (VA), civilian healthcare providers have been called upon to screen their patients for military service. However, there has been limited examination of veterans'; preferences for care in civilian healthcare settings. This study explored service members'; preferences for having their military-related health concerns addressed by civilian providers.

Methods: Data were drawn from Operation: SAFETY, an ongoing study examining health among US Army Reserve/National Guard Soldiers and partners. Participants reported attitudes and preferences for seeking healthcare in the civilian domain. The present sample included current or former male soldiers (N=246). Likert scale responses to attitudinal questions were categorized into *agree*, *disagree*, and *no opinion*. Multinomial logistic regression models examined relations between participants'; attitudes about these factors. Logistic regression models examined relationships between healthcare preferences (VA or civilian providers), and whether the service member believes their health problems are related to military service.

Results: Overall, 43% ($n=105$) of participants felt their health problems were related to their military participation and 35% ($n=66$) felt their doctor should ask about military status. However, among soldiers who attribute their current health concerns to their military service, only 39% have been asked by a provider about their military status. Believing health is related to military participation is marginally associated with lower odds of preferring a civilian healthcare provider (compared to the VA) for both physical (OR=0.57; 95% Confidence Interval (CI)=0.30, 1.06) and mental (OR=0.57; 95% CI=0.31, 1.06) health care. Further, those who attribute their health to military participation have higher odds of believing their healthcare provider understands military culture (OR=2.07; 95% CI=0.99, 4.33).

Discussion: Results revealed factors, such as beliefs about the relation between military service and health and providers'; military cultural competency, which may be important in influencing veterans'; healthcare preferences. Future work is needed to understand how these factors inform treatment seeking, adherence, and outcomes.

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IDENTIFYING RESILIENCY FACTORS THAT PROTECT AGAINST SUBSTANCE USE AMONG PREVIOUSLY DEPLOYED SOLDIERS

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Identifying resiliency factors that protect against substance use among previously deployed soldiers

Background and Objectives: Soldiers who have been deployed to war zones are at an increased risk for negative health outcomes, including substance use. This study examined potential resiliency factors associated with decreased risk for illicit drug use and non-medical use of prescription drugs (NMUPD) among US Army Reserve / National Guard (USAR/NG) soldiers who have previously been deployed.

Methods: Data were drawn from Operation: SAFETY (Soldiers and Families Excelling Through the Years), an ongoing longitudinal study examining health among US Army Reserve/National Guard Soldiers and partners (N=411 couples). The present sample included 248 male soldiers who had previously been deployed. Unit support, deployment preparation, and support from family and friends were measured using the Deployment Risk and Resilience Inventory-2. At year one follow up, illicit drug use and NMUPD were assessed using the NIDA modified ASSIST. Logistic regression models were used to examine the influence of baseline unit support, deployment preparation, and support from family and friends on drug use at follow-up.

Results: 9% of participants reported current illicit drug use or NMUPD. Baseline reports of greater unit support were significantly associated with less likelihood of illicit drugs or NMUPD at year one follow up (OR = 0.96; 95% CI: 0.92, 0.99). Deployment preparation was not a significant predictor of current use of illicit drugs or NMUPD. Baseline reports of greater deployment support from friends and family were significantly associated with less likelihood use of illicit drugs or NMUPD at follow-up (OR = .94; 95% CI: 0.89, 0.99). In the adjusted model, which controlled for PTSD, the association between unit support and illicit drug use / NMUPD remained protective against drug use at follow-up (AOR = .96; 95% CI: 0.93, 0.99). Deployment preparation was not significantly predicting current drug use. There was some evidence suggesting that support of friends and family was protective against drug use at follow-up (AOR = .95; 95% CI: .90 - 1.00).

Discussion: Unit support and deployment support from family and friends were associated with lower odds of drug use. These findings suggest that among USAR/NG soldiers who have been deployed, various sources of social support are important protective factors against drug use. Post deployment resources should find ways to promote social support to offset possible negative health outcomes.

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INSOMNIA, PTSD, AND MEDICATION USE IN OEF/OIF/OND VETERANS WITH TBI SYMPTOMS

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Studies estimate that up to 70% of Operation Enduring Freedom/Operation Iraqi Freedom/Operation New Dawn (OEF/OIF/OND) Veterans with traumatic brain injury (TBI) also have clinically significant sleep issues. Difficulty sleeping has been shown to be risk factors for, and associated with PTSD, suicidal ideation, and other detrimental health behaviors such as tobacco use and alcohol abuse in non-TBI samples (Germain et al, 2014). The combination of these factors can present significant clinical and treatment complexity accompanied by patient, provider, and system burden. However, treatment recommendations regarding the ineffectiveness of benzodiazepines and risks associated with chronic opioid use within this population are clear (Seal, et al., 2012; Watson, Ghani, & Correll, 2016). The current study sought to understand the prevalence and relationships among insomnia severity, PTSD, alcohol and tobacco abuse, in conjunction with opioids and benzodiazepines prescribed in a sample of OEF/OIF/OND Veterans with cognitive complaints who presented for the nationally mandated second level TBI evaluation in the Phoenix VA system. The sample included 137 (ages participants 95% male, 71% Caucasian, ages 21 to 58). Using the insomnia severity index (ISI), 21% of Veterans reported subthreshold insomnia, 39% reported moderate insomnia, and 28% had severe levels of insomnia. Fifty-six percent reported significant PTSD symptoms (PTSD-M \geq 50, PTSD Checklist, military version). Overall, 12% of Veterans were prescribed benzodiazepines and 14% opioids. As insomnia severity increased, so did the prevalence of opioid and benzodiazepine prescriptions such that 3% and 7% of Veterans with subthreshold insomnia were prescribed opiates and benzodiazepines, respectively. Whereas, 13% and 11% of Veterans with moderate insomnia, and 26% and 24% of Veterans with severe insomnia were prescribed opiates and benzodiazepines, respectively. PTSD and insomnia symptoms were significantly correlated ($r = .68$, $p < .001$), however, alcohol abuse and tobacco use were not correlated with insomnia, PTSD symptoms, or cognitive complaints, nor were cognitive complaints with PTSD or insomnia (all p 's $> .05$). The results of this study provide insight into current medication practices within OEF/OIF/OND Veterans, along with the need to provide more education and services for evidence based practices (e.g. CBT-I for insomnia) to improve future treatment.

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MENTAL AND BEHAVIORAL HEALTH SEQUELAE OF VICARIOUS TRAUMA AMONG SPOUSES OF U.S. MILITARY SERVICE MEMBERS

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Background: Emerging research has found links between service member/veteran Posttraumatic Stress Disorder (PTSD) and psychological distress among their spouses. This may be due to spouses internalizing the service member's traumatic experiences and/or the spouse's own life experiences. Whereas PTSD often co-occurs with mental and physical health outcomes, there is limited data on the extent to which vicarious trauma is a risk factor for similar comorbidities in military spouses. The present research examined the prevalence of vicarious trauma among civilian spouses of service members and the relations between vicarious trauma and spousal mental health, substance use, and relationship functioning.

Methods: Data were drawn from the baseline wave of Operation: SAFETY, an ongoing study examining health among U.S. Army Reserve/National Guard soldiers and their partners. The present sample included 344 civilian spouses (24 males, 320 females) with no prior military history. Vicarious trauma was defined as the presence of PTSD symptoms above an established cutoff for probable PTSD (scores \geq 31; Bovin et al., 2016) without ever experiencing a traumatic event. Among spouses without a prior traumatic event, regression analyses were used to examine relations between PTSD symptoms and mental health, substance use, and relationship functioning, controlling for spouse sex and service member PTSD symptoms.

Results: 9.09% of civilian spouses met criteria for vicarious trauma. Among civilian spouses without a prior traumatic event (N=132), their own PTSD symptoms were associated with poorer mental health [depressive symptoms ($b=0.31$, $p<.001$), anxiety ($b=0.38$, $p<.001$), anger ($b=0.31$, $p<.001$), emotional wellbeing ($b=-0.92$, $p<.001$)], greater likelihood of substance use [alcohol use (RR=1.02, $p<.01$), heavy drinking (RR=1.01, $p<.05$)], alcohol problems (RR=1.03, $p<.001$), current cigarette use (OR=1.04, $p<.05$)], and poorer relationship functioning [marital satisfaction ($b=-0.82$, $p<.001$)]. There were no relations between PTSD and any form of current/past illicit or non-medical prescription drug use.

Conclusions: Nearly 1 in 10 civilian spouses meet criteria for probable PTSD without having experienced a traumatic event. Further, civilian spouse PTSD symptoms were associated with negative mental health, substance use, and relationship functioning outcomes. Future research adopting dyadic approaches to examining the sequelae of military-related trauma may benefit both soldiers and their spouses.

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THE EFFECTS OF THERAPY DOG INTERVENTION ON ANXIETY IN ADULT PATIENTS UNDERGOING DENTAL PROCEDURES: A PILOT STUDY

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Dental anxiety can be a significant barrier to dental care. Individuals suffering from dental anxiety often arrive late to or fail to keep dental appointments, which may lead to deteriorating dental problems and the need for more extensive and challenging dental interventions. The use of therapy dogs as an intervention to reduce anxiety has shown some efficacy in various patient populations, but has not been employed in adults with dental anxiety. This on-going pilot study is assessing the acceptability, feasibility, and effectiveness of reducing dental anxiety in adult patients by using a therapy dog intervention. Adult patients self-reporting dental anxiety were invited to participate in this study. After consent, participants were randomized into a therapy dog intervention group (DOG) or a standard care (SC) control group. A ten-minute intervention with a therapy dog was administered at the first two dental treatment sessions prior to the start of treatment for participants in the DOG group. Participants in the SC group spent ten minutes in the dental chair reading magazines or relaxing quietly. Study outcomes included psychological (e.g., anxiety) and physiological (e.g., heart rate variability) assessments, as well as adherence to dental appointments. Preliminary results suggest the therapy dog intervention is effective in reducing self-reported dental anxiety and resulted in an increase in comfort after dental treatment. Further, physiological data suggest the intervention may reduce physiological arousal prior to dental treatment. These initial findings show that adult patients with dental anxiety will benefit from therapy dog intervention. In previous studies, decreased anxiety is correlated with higher compliance to dental appointments, improved dental health, and overall higher satisfaction in dental care. A therapy dog intervention for adults with dental anxiety may be just as effective and less costly or risky compared to standard pharmacological interventions such as anxiolytics.

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THE ROLE OF SOCIAL SUPPORT DURING POST-DEPLOYMENT RE-INTEGRATION IN THE ARMY NATIONAL GUARD (ARNG)

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Since September 11, 2001, the ARNG has experienced unprecedented operational stress. These soldiers experience post-deployment stressors unique to active components, including unit deactivation, unemployment, financial difficulties, and military-civilian role adjustments, putting ARNG members at high risk for mental health concerns. This study examined the buffering effects of civilian and military social support on the impact of reintegration stress on the mental health of ARNG members post-deployment.

Data were collected from 99 male, ARNG members. Inclusion criteria included return from deployment in support of OEF/OIF six months prior to participation.

Face-to-face structured interviews were conducted with ARNG members at six months post-deployment and hierarchical multiple regression analyses were conducted to assess the contribution of reintegration-related stress and trauma exposure on self-reported mental health and PTSD symptoms at six months post-deployment.

Regression analyses revealed reintegration stress ($b = -.59$; $p < .01$) and civilian social support ($b = 1.02$; $p < .01$) were associated with self-reported mental health during the post-deployment reintegration period. Contrary to expectations, neither civilian, nor military social support moderated the relationship between reintegration stress and self-reported mental health. A similar pattern emerged for PTSD symptoms. Specifically, civilian social support ($b = -0.42$; $p < .01$) was associated with lower levels of PTSD symptoms while trauma exposure ($b = 3.61$; $p < .01$) was associated with higher levels of symptoms. Contrary to expectations, social support (civilian and military) did not moderate the association between reintegration stress and PTSD symptoms.

The findings suggest that civilian social support is an important contributor to better mental health and lower levels of PTSD symptoms in this population. Social support from families and friends may be leveraged by programs aimed at serving ARNG members during reintegration. Clinicians are encouraged to evaluate civilian social support available to ARNG clients and consider ways in which these resources can be integrated in treatment efforts.

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AN EXAMINATION OF OBESITY PROMOTING FOODS PRESENT IN THE HOME BASED ON BMI CATEGORY AND FOOD SECURITY

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Individuals with food insecurity are at increased risk for developing obesity, but reasons remain unclear. This secondary data analysis evaluated whether BMI category (lean/overweight/obese) and food security are associated with the amount of obesity promoting foods in the home, independently and in interaction with one another.

Participants ($N=191$, 84% female, 65% non-white, 40% food assistance, 72% overweight/obese) were recruited for a study on food purchases. The household member who made 75% of purchases completed a demographic survey and the USDA Food Security Survey. Study personnel twice visited homes 2 weeks apart to complete an inventory including desserts, snacks, microwavable foods, sugary beverages, processed meat, cheese, yogurt, milk, and 'other dairy'; items (e.g. heavy cream). ANCOVA models tested associations between BMI and food security with the amount of foods, adjusting for food assistance and race. A Bonferroni correction resulted in p -value of .007.

BMI ($p=.01$) and food security ($p=.15$) were not associated with obesity promoting foods, but significant differences were found. The interaction between BMI and food security on processed meat was significant, $F(2,191)=5.64$, $p=.004$. In stratified analyses, BMI wasn't associated with processed meat in food secure homes, $F(2,65)=1.66$, $p=.199$, but was associated with more processed meat in food insecure homes, $F(2,126)=5.74$, $p=.004$, $\eta^2=.03$). In food insecure homes, individuals with obese BMI ($M=2.31$, $SD=1.43$) and overweight BMI ($M=2.39$, $SD=1.62$) had more processed meat compared to individuals with lean BMI ($M=1.19$, $SD=1.25$). BMI was associated with cheese, $F(2,191)=5.31$, $p=.006$, $\eta^2=.01$, individuals with obese BMI ($M=2.95$, $SD=1.53$) had more than individuals with lean BMI ($M=1.96$, $SD=1.36$). BMI was associated with 'other dairy'; $F(2,191)=5.12$, $p=.007$, $\eta^2=.02$, individuals with obese BMI ($M=1.18$, $SD=.95$) had more than individuals with a lean BMI ($M=.58$, $SD=.76$). Food security and BMI were not associated with other variables.

Contrast to studies that relied on self-report, these results do not support associations between BMI or food insecurity and obesity promoting foods in the home. Although there were significant associations involving processed meat, cheese, and other dairy, effect sizes were small. Future research should study the validity of self-report of home food environment. Future research should also examine why individuals with food insecurity are at increased risk of obesity.

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EMPOWERING THE PCM TEAM: A BEHAVIORAL-SCIENTIFIC APPROACH TO WEIGHT-RELATED SERVICE DELIVERY

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Introduction: Whereas a majority of the US population now meets criteria for overweight or obesity, shockingly few referrals are made by primary care providers for the purpose of weight management. Resulting are complications expressed in terms of medical comorbidity and diminished health-related quality of life. The present study sought to increase the number of patients connected with weight management resources above the threshold below which the total population of persons overweight and obese would otherwise continue to grow. The resulting weight-specific referral system was subsequently evaluated for effectiveness and scalability.

Methods: Stakeholders from clinical health psychology, family medicine, internal medicine, endocrinology, health promotion, disease management, exercise physiology, and nutritional medicine collaboratively conceived of a 'referral hub'; concept through which to funnel weight-related courses of care. Historical baseline data were gathered for weight-related referrals, and the rate of referral was tracked over 20 months following implementation of a 'referral hub'; concept.

Results: The monthly referral rate at baseline ($M=3.83$; $SD=2.25$) was compared against data for nine months following implementation of the 'referral hub'; concept ($M=31.53$; $SD=9.97$). The observed increase in weight-related courses of care was substantial ($d=3.83$) and sustained for the duration of the study period.

Conclusion: The establishment of a purpose-built referral hub for weight management improved patient engagement substantially, and was well-tolerated by busy primary care providers. These data suggest that seemingly small efforts to increase the simplicity and ease with which such referrals are made can have dramatic and positive effects on provider behavior. In light of the overwhelming prevalence of overweight and obesity, future efforts should seek to increase the scale (e.g., group appointments) at which similar such referral hubs are designed to operate effectively.

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USING MULTI-TASK LEARNING TO DEVELOP RISK PROFILES FOR REDUCING PRESCHOOL OBESITY HEALTH INEQUITIES

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Background: The contributing factors to obesity-related health inequities during the preschool years are multi-faceted. While some factors may be shared amongst *all* preschoolers from low-income and minority backgrounds, others may be unique to each preschooler and/or subgroups of this population. Distinguishing shared and unique risk-factors is important to refining targets for public health versus individual-level prevention and intervention efforts. In this pilot study, we utilize multi-task learning (MTL) to develop individual and group risk-models for preschool obesity using formative data collected from low-income, primarily African-American families ($n=23$) in Detroit.

Methods: Height and weight measures were taken for preschoolers and caregivers to calculate BMI z-score and BMI, respectively. Caregivers reported family socio-demographic information and completed questionnaires on their feeding styles, impulsivity, depression, stress, social support, healthy literacy and numeracy, and food-related purchasing patterns, routines and resource management skills (e.g., budgeting). Observational coding data on the nutrition environment of primary food markets identified by each caregiver was also included. In total, 112 variables were examined as risk-factors of preschool obesity. MTL simultaneously and dependently generates individual risk-profiles for each participant in a particular data set. Subgroup/group models are then generated by identifying shared risk-factors amongst individual models. 10-item risk-profiles were generated for each preschooler and for the sample (group) as a whole.

Results: Variability was evident among individual risk-profiles. For the group model, 5 risk-factors (caregiver age, non-planning impulsiveness, combined motor + perseverance impulsiveness, total food market nutrition environment, and healthy food availability at food markets) were shared by all preschoolers and the additional 5 risk-factors (stress, control of feeding, attentional impulsiveness, SNAP dollars the family receives, and motor impulsiveness) were shared by 57–96% of preschoolers.

Conclusions: Providing strategies to aide caregivers in thinking before acting and resources for identifying and accessing food markets with healthy nutrition environments are important public health targets for our sample, but variability in individual risk-profiles suggests family-based intervention is also important for maximizing efforts to reduce preschool obesity in this high-risk group.

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USING REINFORCEMENT LEARNING OPTIMIZATION TO ACHIEVE MAXIMUM COST-EFFECTIVENESS OF WEIGHT LOSS INTERVENTIONS

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Gold standard behavioral weight loss interventions produce 5–10% weight loss (WL), but weight regain is typical. Providing intensive interventions in the very long-term is infeasible due to high financial cost and participant burden. Using remote coaching and digital monitoring represent innovative forms of ongoing intervention, but generally are either high cost and high accountability (e.g., phone calls from trained coaches) or low cost and low accountability (e.g., automated text messages). A particularly innovative solution to this tension would be to continuously vary the intensity-accountability balance of the intervention using the engineering principle of “reinforcement learning” in which a system tracks outcomes and continuously varies each participant’s intervention based on participant response. In Project ReLearn, the first use of a reinforcement learning project for WL, participants (n=51) completed a 1-month, group-based in-person behavioral WL intervention and then were randomly assigned to receive 3 months of twice-weekly interventions that were non-optimized (NO; 10-minute phone calls) or optimized (a combination of phone calls, text exchanges, and automated messages selected by an algorithm). The Individual Optimization (IO) algorithm selected interventions based on past performance of each intervention for each participant. The Group Optimized (GO) algorithm selected the best intervention for each group member that fit into a fixed amount of time (i.e., 1 hour). For this pilot trial, we evaluated feasibility of this new system and whether optimization would achieve equivalent benefit at a reduced cost. We hypothesized that at week 10 of remote coaching: (1) WL would be equivalent between all groups and (2) mean clinician time would be lower for both optimized groups. Results indicated that the system was feasible (successfully developed and deployed) though some technical and practical problems arose (e.g., clinician time management when participants fail to immediately respond), and that weight losses were equivalent (MNO= 4.71%, MIO=4.72, MGO=4.07). Yet, costs (in terms of hours of clinician time per participant) were vastly different: MNO= 4.00, MIO=1.47, MGO=1.48 hours. Thus, the optimized interventions yielded equivalent WL at roughly one third the cost. Overall, the reinforcement learning system demonstrated strong promise, but many improvements should be implemented before this system is implemented on a wider scale.

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WHAT IS IN IT FOR ME? IMPACT OF SELF-EFFICACY ON SURGICAL WEIGHT LOSS DECISIONS

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Background: Obesity is prevalent among a third of U.S. adults and a leading indicator for many chronic diseases. Those with higher BMI tend to value large weight reductions, especially for weight loss treatments such as bariatric surgery. Self-efficacy is important for non-surgical weight loss interventions but there is less information about the role of self-efficacy in the candidacy phase when there are discussions of side effects and decisions for uptake. The current study aimed to test if and how weight loss self-efficacy is associated with the risk one is willing to stake in order to achieve an ideal weight.

Methods: The study surveyed a national probability based sample of US adults ages 18+ with clinical obesity (BMI ≥ 30). A 2x3 repeated measures design was employed where participants answered their willingness to achieve different weight loss amounts within the context of bariatric surgery in varying risk scenarios. Scenarios included: weight loss conditions (1. Ten percent weight loss or 2. Percent for ideal weight loss) and side effect levels (1. Low (chronic diarrhea), 2. Moderate (severe infection), and 3. High (death)). This design was analyzed using a repeated measures linear mixed model.

Results: Results indicated participants were more likely to stake more risk for every unit increase they hypothetically achieved for an ideal weight ($\beta=11.2$, $p=0.04$). Yet, participants were more willing to stake risk under ideal weight loss conditions with the risk of death, only when they had higher weight loss self-efficacy ($\beta=1.20$, $p=0.05$). Follow-up margin predictions also demonstrated individuals with higher self-efficacy were more likely to stake risk. This trend was highest for those scenarios presenting one’s ideal weight as the bariatric surgery outcome.

Conclusions: Results from the modeling with the current sample indicate weight loss self-efficacy is a predictor of participants’ willingness to stake high risk to achieve one’s ideal weight after bariatric surgery. This indicates an opportunity for streamlining clinical assessments and shared decision making. Results also call for expanded partnerships in patient education interventions to bolster patients’ self-efficacy among those at high risk. Increasing self-efficacy among eligible patients has potential to increase uptake of bariatric surgery, enhance patient outcomes, and reduce the burden of obesity on the health care system.

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ADHERENCE TO SELF-MONITORING PREDICTS WEIGHT LOSS AND WEIGHT REGAIN IN RURAL BREAST CANCER SURVIVORS

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Background: Dietary self-monitoring is a cornerstone of behavioral strategies for weight loss and weight maintenance. Adherence to self-monitoring daily calories has been positively correlated with weight loss results, however, the impact of tracking the number of specific food items rather than calories has not been well investigated.

Objective: The study examines change in self-monitoring consistency (percentage of weeks number of specific food items of a structured diet, i.e. prepackaged entrees/shakes, fruits/vegetables, and unplanned snacks, were tracked ≥ 5 days) over time and the relationship between self-monitoring consistency and percent weight loss (first 6 months) and percent weight regain (months 6 to 18).

Methods: 210 rural breast cancer survivors ($M=58.0$ years, $SD=8.2$) with body mass index 27 to 45kg/m^2 ($M=34.0\text{kg/m}^2$, $SD=4.4$) participated in an intervention consisting of two phases: non-randomized 6-month weight loss followed by 12-month weight maintenance where participants were randomized to either continued bi-weekly conference calls or bi-weekly newsletters. The first 6 months, participants were instructed to consume 2 meal replacement shakes, 2 prepackaged entrees, 5 one-cup servings of fruit/vegetables, and to minimize snacks and meals out. During 6 to 18 months they were instructed to incorporate more home-prepared meals, maintain high fruit/vegetable consumption, and limit meals out. Dietary components were tracked daily via paper logs sent to interventionists via fax, email, or voicemail. Participants with weights available at all three time points were included in final analyses ($n=169$).

Results: Self-monitoring consistency was stable and highest during the first 6 months of the weight loss phase ($M=91.4\%$ of weeks, $SD=15.5$) and decreased during the weight maintenance phase ($M=67.5\%$ of weeks, $SD=37.1$, first quarter; $M=42.4\%$ of weeks, $SD=44.1$, last quarter). Higher self-monitoring consistency during weight loss phase was associated with greater weight loss at 6 months, $r(167) = -.39$, $p < .001$. Degree of reduced self-monitoring consistency during maintenance, predicted weight regain at 18 months after controlling for nonsignificant effects of percent tracking during weight loss, treatment arm, and interaction between treatment arm and percent reduced tracking during maintenance, $b = -.057$, $p < .001$.

Conclusion: Adherence to consistently tracking specific food items over time affects weight loss and weight regain. Strategies for maintaining self-monitoring are needed to promote weight maintenance.

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AN ECOLOGICAL MOMENTARY STUDY OF PREDICTORS OF DAILY WEIGHING AND PHYSICAL ACTIVITY TRACKING AMONG YOUNG ADULTS

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Adherence to self-monitoring predicts weight loss success, but declines over time. Predictors of lapses in self-monitoring are not well known. The goal of the current study was to use ecological momentary assessment (EMA) to explore behavioral and psychosocial predictors of lapses in daily weighing and wearing activity trackers.

Using the study's smartphone application, 20 young adults ($M = 27.1 \pm 4.7$ years; $M_{\text{BMI}} = 25.3 \pm 3.2 \text{ kg/m}^2$, 70% female, 70% non-Hispanic white, 25% undergraduates and 75% college graduates) completed EMA survey sets 3 times per day for 30 days. Survey sets included 3–8 questions from a pool of 34 items assessing self-reported facilitators and barriers to weighing/tracker wear, intentions, mood, stress, dietary intake, self-reported physical activity, and sleep. All participants were provided a Wi-Fi scale and used a Fitbit to track activity. Participants were told of the benefit of daily weighing and tracker wear for weight maintenance, but were not given specific goals. Objective Fitbit data was used to determine the daily outcomes of weighing (yes/no) and wearing a tracker (yes/no). Weight change from the prior weight observation, minutes of moderate-to-vigorous physical activity (MVPA), and steps were also explored as potential predictors of weighing/tracker wear. Missing EMA data was imputed using multilevel multiple imputation. Separate generalized linear mixed models modeled the effect of each predictor on the probability of weighing and tracker wear.

Participants completed 81% of the surveys. There were a total of 366 weigh days and 492 tracker wear days (out of 600). The median number of weigh and tracker wear days were 21 (IQR=10–28) and 23 (IQR=16–26), respectively. Objectively measured weight change and minutes of MVPA did not predict weighing or wearing a tracker the next day. However, each 1000-step increment on the prior day was associated with 4% greater odds of tracker wear the next day (95% CI: 1.01, 1.08). Participants were less likely to weigh on a given day if they self-reported that their weight had stayed the same or gone up (vs. declined; OR=0.16 [95% CI: 0.06, 0.45], OR=0.27 [95% CI: 0.09, 0.79], respectively), and were less likely to weigh if they were planning to engage in usual activity compared to less than usual (OR=0.55, 95% CI: 0.30, 0.99). Higher ratings of happiness predicted higher odds of tracker wear the next day (OR=1.51, 95% CI: 1.06, 2.14). Self-reported PA, dietary intake, sleep, stress, intentions, and other mood ratings did not predict either outcome.

On average, adherence to weighing and tracker wear was high. The findings suggest that self-reported judgments of behavior and psychosocial factors may be more associated with adherence than actual weight change and activity behaviors. The results highlight the need to explore additional factors that might be time-varying predictors of lapses in self-monitoring.

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ASSOCIATIONS BETWEEN PARENTAL MONITORING AND ADOLESCENT WEIGHT STATUS: MEDIATING VIA DIETARY INTAKE AND PHYSICAL ACTIVITY

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Objective: We examined how parental monitoring is associated with adolescents' concurrent and subsequent weight status and how this may be mediated through health-promoting behaviors, such as healthy eating and physical activity, and health-risk behaviors, such as unhealthy eating and sedentary activity. Also we examined whether these relationships differ among racial/ethnic groups using multigroup structural equation modeling.

Method: Data came from 4,088 Black, Latino, and White students assessed in 7th and 10th grades. Parental monitoring was assessed by adolescents' reporting on their parents' monitoring behavior. Dietary Intake was assessed by adolescents' self-report using items adapted from the School Based Nutrition Monitoring questionnaire. Physical activity was assessed using items adapted from the PACE+ screening measure for physical activity on a 7-day recall. Sedentary behavior was assessed using items where adolescents reported time spent using the computer and watching television per week.

Results: Parental monitoring was not directly related to adolescents' weight status, but positively associated with adolescents' healthy eating and physical activity and negatively with sedentary behavior similarly across three groups. Parental monitoring was negatively associated with unhealthy eating only among Latino.

Conclusion: Parental monitoring is a salient dimension of authoritative parenting, a parenting style that is generally associated with positive child and adolescent development. Here it is demonstrated that those positive effects also extend to important health-related behaviors. These findings suggest that programs aimed at improving dietary intake and physical activity in adolescents should incorporate parents and address their parenting approach.

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ATTITUDES TOWARD WEIGHING: LINKING AFFECT, BEHAVIOR, AND WEIGHT IN THE PERINATAL PERIOD

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Weighing oneself regularly is widely recommended in behavioral interventions to treat and prevent obesity. It may also be important in the perinatal period, when managing weight gain has implications for maternal and infant health. Yet weighing may not be perceived as pleasant, especially for those who struggle with weight management—the very adults who may benefit from the feedback this behavior provides. We aimed to examine the reliability and validity of a concise self-report measure of affective attitudes toward weighing, and its relation to perinatal weight. Within the *Pregnancy Environment and Lifestyle Study* (PETALS), an ongoing pregnancy cohort in an integrated healthcare delivery system, we examined a subset of participants who completed a survey during pregnancy and subsequently delivered an infant between March and August 2017 ($N = 138$; $M \pm SD$ age = 30.9 ± 5.4 , range 18.8 - 45.3 years; 39% Latina, 30% White, 18% Asian, 9% African American/Black, 5% other). In the survey, participants completed a novel scale assessing affective attitudes toward weighing (3 items) and established scales assessing affective attitudes toward physical activity and healthy eating (4 items each), with higher scores indicating more positive attitudes; and reported how often they weigh themselves. We extracted pre-pregnancy body mass index (BMI) and total gestational weight gain (i.e., weight change from pre-pregnancy to delivery) from electronic health records. Overall, pregnant women reported moderately positive attitudes toward weighing (2.8 ± 1.1 on the 5-point Likert scale). Cronbach's alpha, an estimate of internal consistency reliability, was .74. Supporting criterion validity, attitudes were more positive among the 30% who weighed daily/weekly vs. the 70% who weighed less than weekly (3.1 ± 0.9 vs. 2.7 ± 1.2 ; $p = .04$); and among the 8% who weighed daily vs. the 92% who weighed less than daily (3.6 ± 1.0 vs. 2.8 ± 1.1 ; $p = .02$). Supporting discriminant validity, positive attitudes toward weighing modestly correlated with positive attitudes toward physical activity ($r = .24$, $p = .004$) and healthy eating ($r = .25$, $p = .003$). Positive attitudes toward weighing correlated with lower pre-pregnancy BMI ($r = -.41$, $p < .0001$; sample mean 27.0 ± 6.2 kg/m²), and a trend emerged such that attitudes were more positive among the 52% of participants who met national guidelines for appropriate gestational weight gain vs. the 48% who exceeded them (3.0 ± 1.1 vs. 2.6 ± 1.1 ; $p = .08$). Results indicate that affective attitudes toward weighing can be assessed with a scale that is brief, easily administered, reliable, and valid. Affective attitudes may influence weight management before and during pregnancy, and should be examined in future studies.

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CARDIOMETABOLIC RISK IN YOUNG ADULTS: DO PERCEPTIONS MATCH REALITY

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Background. Metabolic syndrome (MetS) is becoming more prevalent in younger populations. Those with components of MetS (i.e., increased abdominal adiposity, high fasting blood glucose, blood pressure, and triglycerides, and low high-density lipoprotein cholesterol) are at an increased risk for diabetes, cardiovascular disease, and stroke. Understanding young adult risk and perceptions and knowledge of risk can serve to inform improvements in patient-health care provider conversations.

Purpose. We examined the perception of metabolic risk and MetS status in a sample of young adults with Body Mass Index (BMI) values in the overweight or obese range.

Methods. Young adults aged 18–35 (N=351; 79.8% female; 57% Caucasian; M age 23.21 ± 4.31 years; M BMI 31.36 ± 4.2 kg/m²) enrolled in a healthy body weight randomized controlled trial completed the following measurements and measures: anthropometric, blood pressure, fasting blood draw, and a 5-item questionnaire assessing knowledge of and self-perception of metabolic risk including knowledge of blood glucose, cholesterol, and blood pressure.

Results. The majority of participants (n=237; 68.1%) did not have knowledge of the term metabolic risk, while 62.4% (n=216) met at least one MetS criteria. The majority also reported never having their blood glucose tested (n=191; 54.9%) even though 13.7% (n=45) and 17.3% (n=55) had a fasting glucose and fasting hemoglobin A1c (HbA1c) levels in the pre-diabetes range, respectively. No differences were observed in blood glucose and HbA1c between those who reported testing and those who didn't. Approximately 32% (n=110) reported not knowing their blood pressure, with 16.8% (n=59) having an elevated blood pressure. Blood pressure levels did not differ significantly by self-reported knowledge of blood pressure. There were significant differences in systolic blood pressure (p<0.001) and abdominal circumference (p<0.001) by sex, systolic blood pressure by race (p=0.005), and diastolic blood pressure (p<0.001) and abdominal circumference (p<0.001) by BMI.

Conclusions. A disconnect exists between actual metabolic risk and understanding/perception of risk in young adults in a population where the majority is already meeting at least one criteria for MetS. Implications will be discussed in context of informing patient-provider conversations and educational programs for young adults about metabolic risk and the importance of maintaining healthy lifestyles across the life course.

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EFFECTS OF BEHAVIORAL WEIGHT-LOSS TREATMENT ON FOOD ADDICTION SYMPTOMS AND FRUIT INTAKE AMONG ADULTS WITH OBESITY

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Introduction: A significant subset of adults with obesity report problems with "food addiction" (FA; the compulsive consumption of certain foods despite adverse consequences), yet little is known regarding treatment. This study evaluated the effects of behavioral weight-loss treatment on FA and identified its associations with weight change and fruit intake.

Methods: The sample included 31 adults (87.1% women, 83.9% Caucasian; M±SD: age=54.4 ± 10.2 years, BMI=37.6 ± 3.8 kg/m²) who met criteria for FA based on the Yale Food Addiction Scale (YFAS; ≥3 symptoms plus distress/impairment) and completed the 4-month behavioral weight-loss program. The YFAS, a self-report questionnaire based on DSM-IV substance dependence criteria, was administered pre- and posttreatment. Fruit intake was measured by the Rapid Eating Assessment for Participants-Shortened Version.

Results: Treatment produced significant reductions in FA symptom count (M±SD: -2.4 ± 1.8 of 7 symptoms, p=.001) and weight (M±SD: -8.3 ± 5.4% body weight, p<.001), with a trend toward increased fruit intake (McNemar's chi-square=194.5, p=.065). Increased fruit consumption (r=-.466, p=.008) and decreased weight (r=.451, p=.011) were significantly associated with reduced FA symptoms. Similarly, participants who reported eating ≥2 servings of fruit/day at 4-months had significantly greater reductions in FA (-3.2 ± 1.6 vs. -1.7 ± 1.7 symptoms, p=.030) and larger weight losses (-12.1 ± 5.8% vs. -6.8 ± 4.5% body weight, p=.010) compared to participants who ate less fruit.

Conclusions: Behavioral weight-loss treatment led to significant improvements FA symptoms among adults who met YFAS criteria, and greater improvements in FA were associated with increased fruit intake and larger weight loss. Increasing fruit consumption within the context of a behavioral weight-loss program may be an effective approach to improving FA symptoms in this population.

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ENGAGEMENT AND WEIGHT LOSS IN A WEB AND MOBILE PROGRAM FOR LOW-INCOME POSTPARTUM WOMEN: FITMOMS/MAMÁSACTIVAS

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Greater engagement with technology-based health interventions is often associated with improved outcomes. To better understand predictors of engagement among multicultural, low-income women, this paper reports on patterns of engagement with the Fit Moms/Mamás Activas website, a 12-month post-partum weight loss intervention that resulted in significantly greater weight loss among postpartum women in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) relative to standard WIC. Engagement metrics included the percentage of participants who logged in at least once per month, use of 19 intervention features characterized by the proportion of total page views per feature, and exploration of patterns of use based on total logins. Four user groups were established (N = 174): non-users (NU: 0–11 log-ins, 26.4%), low-engaged (LE: 12–47 log-ins, 32.8%), high-engaged (HE: 48–96 log-ins, 17.2%), and super-users (SU: 97+ log-ins, 23.6%). Log-in rates were initially high and decreased over time. More than three-quarters (82.2%) of participants initiated the web program, almost half (47.1%) logged in during month 6, and 17.2% logged in during month 12. The most utilized intervention features were related to self-monitoring behaviors and lesson content. A one-way ANOVA revealed a significant effect of user type on average days tracking weight ($F(3,168)=70.5$, $p=0.000$), diet ($F(3,168)=30.2$, $p=0.000$), and physical activity ($F(3,168)=43.8$, $p=0.000$). Super-users had significantly more tracking days compared to all other user types, and comprised half (49.8%) of all lesson page views. There was a significant effect of user type on percent weight loss from baseline to 12 months ($F(3,148)=5.15$, $p=0.002$) among completers (87%). Super-users had significantly greater percent weight loss than LE and non-users, but not HE users (SU -7.15% +6.67, HE -5.25% + 6.42, LE -3.02% + 7.68, NU -1.31% + 6.77). Non-users were more likely to be employed, ($\chi^2=13.08$, $p=.004$), however no other associations between user type and demographics were found. Low income post-partum mothers engaged primarily with the lessons and self-monitoring features of the Fit Moms/Mamás Activas website. Usage was associated with weight change; user groups who logged in more frequently (>1 per week on average), approximately 40% of the sample, had average weight losses of 5–7% at 1 year. Promoting frequent (>1/week) engagement with web and mobile programs may produce clinically meaningful weight losses in low-income postpartum women.

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EXPLORATION OF FACTORS RELATED TO OBESITY AND SEXUAL FUNCTION

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Objectives: The growing prevalence of obesity worldwide and its negative health consequences are well documented, with a particular focus on physical conditions associated with excess adiposity (World Health Organization, 2000). An accumulating body of research has been focused on the psychosocial consequences of being overweight or obese, such as depression and binge eating (Luppino et al., 2010; Yanovski, 2003). The purpose of this study is to contribute to this body of research in the topic areas of negative body image, internalized weight stigma, depression, and sexual functioning in overweight and obese individuals.

Method: Participants completed questionnaires online assessing for body image dissatisfaction (Body Shape Questionnaire; BSQ), internalized weight stigma (Weight Bias Internalization Scale; WBIS-11), depression (Patient Health Questionnaire; PHQ-9), and sexual functioning (Changes in Sexual Functioning Questionnaire; CSFQ-14). Both participant-entered body mass index (BMI) and waist circumference (WC) were utilized to categorize participants in normal weight (BMI between 18.5 to 24.9), overweight (BMI between 25.0 to 29.9), and obese (BMI over 30.0) categories. One hundred and twenty participants above the age of 18 were included in the analyses assessing for the relationships among the aforementioned variables.

Results: Of the 120 participants, 42 were cisgender male (35%), 75 were cisgender female (62.50%), and two were gender fluid/non-binary (1.70%). Mean scores on the measures were as follows: BMI M= 27, SD= 7.38; WC M= 33.24, SD= 7.55; BSQ M= 84.82, SD= 34.40; WBIS-11 M= 37.72, SD= 12.65; PHQ-9 M= 6.93, SD= 5.98; CSFQ-14 M= 42.88, SD= 10.63. The overweight group reported greater impairment in sexual functioning than obese and normal weight participants as evidenced by lower total scores on the CSFQ-14, $p = 0.03$. A significant relationship was demonstrated between the sexual desire subscale of the CSFQ-14 and waist circumference, $p = 0.04$. Depression scores were a significant predictor of sexual satisfaction scores, a question created to use in adjunct with the CSFQ-14, $p = 0.00$. Finally, a significant relationship was demonstrated between internalized weight stigma and sexual satisfaction, $p = 0.05$.

Conclusions: The relationship between weight, shape, psychosocial well-being, and sexual functioning is complex. In an effort to better serve overweight and obese populations in a healthcare setting, practitioners should consider body image, weight stigma, mood, and sexual function as important aspects of quality of life in their assessment and treatment of these individuals.

Relevance to conference theme: *Extending our reach* as health professionals by considering all aspects of quality of life, including sexual function, in overweight and obese patients in a sensitive and health-centric manner.

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FAMILY ENTROPY: A SYSTEMATIC REVIEW OF ORGANIZATION OF THE FAMILY HOME ENVIRONMENT AND CHILD OBESITY

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High rates of child overweight and obesity place youth at risk for a multitude of short- and long-term health consequences (Biro & Wein, 2010). To inform effective prevention and intervention, it is essential to identify risk and protective factors in children's primary environments, including the home (Davison et al., 2012). The level of organization is a studied, but not well specified aspect of the family home environment that may impact child weight. Prior research on organization within the home environment has included an array of constructs, such as family routines (Fiese et al., 2002), limit setting (Fiese, Rhodes, & Beardslee, 2013), household chaos (Weisner, 2010), crowding (Evans, Lepore, Shejwal, & Palsane, 1998), and the broad home environment (Bradley et al., 2001). The current study proposes a conceptual model depicting relations between the organization of the home environment and child weight, and evaluates support for this model among children ages 2–12 in the existing literature.

Six hundred thirty-seven studies were independently reviewed by four coders for eligibility. Coders assessed the studies for the following inclusion criteria: (i) presented original research (e.g., no review articles, letters, or commentaries) (ii) included individuals between ages 2–12, (iii) measured overweight, obesity, or body mass index (BMI) zscore (zBMI) as a dependent variable, and (iv) measured family organization, disorganization, chaos, routines, limit setting, or crowding as an independent variable. Thirty-one studies were included in the final synthesis.

The conceptual model was supported by the literature, with 75% of studies evidencing statistically significant inverse relations between the organization within the family home environment and child weight. Studies provided compelling evidence across numerous indicators of organization, including family routines, limit setting, crowding, and the broad home environment, suggesting that the relevance to child weight extends beyond a single indicator of home organization. Drawing on these results, the study concludes by proposing a new overarching construct, family entropy, which integrates existing constructs and represents the total organization/disorganization across the home environment. There are numerous directions for future work exploring relations between family entropy and child weight, including (i) examining the mediating role of health behaviors, (ii) examining the moderating role of socioeconomic factors, (iii) broadening evidence across cultures and nationalities.

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IS WEIGHT LOSS SUCCESS A MATTER OF INCREASING ADHERENCE FOR THOSE WITH ADHD?

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BACKGROUND: Adherence to attendance and self-monitoring is associated with treatment success in behavioral weight loss programs. Adults with ADHD are more likely to be obese and less likely to experience weight loss success yet reasons why are largely unexplored. Therefore the aims of this study were to explore adherence and weight loss patterns between adults with and without ADHD.

METHODS: This retrospective analysis examined weight loss results and treatment engagement of participants with and without ADHD from identical 24 week behavioral interventions. Data from iReach (a large multi-center clinical trial) and Focus (a smaller trial including only adults with ADHD) were evaluated to better understand differences. Data from the online and hybrid conditions of iReach were analyzed (n=312) and compared to in-person treatment data from the two conditions of FOCUS (n=37). Both studies shared all materials and a number of the same therapists.

Adherence measures included attendance at weekly classes and submission of self-monitoring journals. Weight loss was expressed as % of baseline weight lost at 6 months. Comparisons were made before and after dividing subjects from each trial into high, moderate and low weight-loss tertiles. Variables were then examined by weight loss tertile.

RESULTS: High, moderate and low iReach tertiles lost 11.7, 5.5, and .2% of baseline respectively, while high, moderate and low Focus tertiles lost 7.9 and 1.9, and gained 1.3%.

Attendance was higher in both iReach conditions (76% and 73%) vs. both conditions of Focus (53% and 58%). Self-monitoring was also higher in iReach (71% in both conditions) vs. Focus (50% and 54%).

CONCLUSIONS: The disparity between level of adherence and weight loss between those with ADHD and those without is striking given that in-person groups (FOCUS) tend to do better with weight loss than online groups (iReach). Since adherence was far lower in the Focus study, research is needed on improving treatment engagement, particularly dietary self-monitoring, in populations with ADHD.

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LIFE EVENTS, PHYSICAL ACTIVITY, AND WEIGHT LOSS MAINTENANCE: DECOMPOSING MEDIATING AND MODERATING EFFECTS ON HEALTH BEHAVIOR

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Introduction: Although adherence to high levels of moderate to vigorous physical activity (MVPA) has been associated with better weight loss maintenance, this analysis attempted to clarify the individual and joint effects of MVPA in concert with significant life events (e.g. divorce, marriage, job change or loss, death of a relative, etc.) on weight following a behavioral weight loss intervention.

Methods: Data from the Tracking Study weight loss trial were utilized. Men and women residing throughout the Minneapolis-St. Paul, MN metropolitan area were recruited, randomized, and followed from July 2012 to September 2015. A four-way decomposition model was used to examine the effect measure modification and mediation of life events by MVPA achievement on 24-month weight. The model analyzed four components: the controlled direct effect (CDE) estimated the portion of the effect of life events on weight controlling for MVPA, the reference interaction (INT REF) estimated the interactive effect of life events and high MVPA on weight, the mediated interaction (INT MED) estimated the portion of the effect of life events and high MVPA on weight that was both mediated and moderated, and the mediated main effect or pure indirect effect (PIE) estimated the effect of life events on weight that was mediated through reported MVPA. These four components were summed to give the total effect. Independent variables were occurrence of life events (≥ 1 vs. 0) reported at 12 months and MVPA achievement (low = 2500 kcal) reported at 18 and 24 months. The outcome was weight measured at 24 months.

Results: The total effect of life events and MVPA on weight was estimated to be 1.36 kg (95%CI= 0.01, 2.70 $p=0.05$) when using 18-month MVPA and 1.63 kg (95%CI= 0.30, 2.96 $p=0.02$) in the model using 24 month MVPA. The CDE of life events on 24-month weight was larger than the estimated total effect in models accounting for 18-month MVPA ($\beta = 2.39$ kg 95%CI= 0.31, 4.48) and 24-month MVPA ($\beta = 2.31$ kg 95%CI= 0.29, 4.33). All other interaction and mediation estimates were not statistically significant.

Conclusion: This decomposition offers new potential for examining the effects of health behaviors that may act as both mediators and effect modifiers of health outcomes in the same analysis. Although little can be said about the interaction of life events and MVPA achievement on weight loss maintenance, our findings help to rule out mediation. These findings suggest that life events and MVPA should be considered for their unique effects on weight loss maintenance. However, simultaneous consideration of joint pathways affecting weight loss maintenance when designing interventions to prevent weight regain is important.

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PERCEIVED MEDIA PRESSURE PREDICTS EATING PATHOLOGY IN YOUNG ADULT WOMEN WITH OVERWEIGHT/OBESITY WHO USE SOCIAL MEDIA

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The negative effects of media on disordered eating are well-documented. Recent studies have focused on social media given the significant increase in social media use among young adults over the past decade. There is initial evidence that social media use is associated with body dissatisfaction and eating pathology in young adult women. However, this research has primarily focused on young adult women of average weight, despite the prevalence of overweight/obesity during young adulthood. The current study investigated social media use and perceived media pressure as predictors of eating pathology in young adult women with overweight/obesity who use social media. Participants were 231 young women aged 18 to 29 ($M = 19.27$, $SD = 1.53$) with a body mass index (BMI) of 25 or greater ($M = 30.71$, $SD = 6.45$). The Sociocultural Attitudes Towards Appearance Questionnaire-4, a social media questionnaire, and the Eating Disorders Examination-Questionnaire were administered. All participants reported using at least one social media site. Approximately 91% of the participants used Facebook, 91.7% used Instagram, 64.8% used Twitter, and 61.0% used other social media sites. Results indicate that 54.7%, 57.1%, 34.4%, and 34.4% of participants used Facebook, Instagram, Twitter, and other social media sites for one hour or more per day, respectively. A multiple regression analysis was used to determine the influence of social media use and perceived media pressure on eating pathology. Overall, the regression model accounted for a significant proportion of the variance in eating pathology, $R^2_{adj} = .185$, $F(2,219) = 26.14$, $p < .001$. We found that perceived media pressure significantly predicted eating pathology such that a 1 unit increase in perceived media pressure was associated with a 0.57 unit increase in eating pathology ($b = .573$, 95% CI [.405, .741], $p < .001$). The amount of time spent on social media did not significantly predict eating pathology ($p > .05$). Results indicate that those who report feeling pressure from the media to achieve societal standards of attractiveness may be more likely to engage in eating pathology. Study findings regarding perceived media pressure support prior research with young adult women of average weight and highlight the importance of examining the manner in which media exposure is experienced rather than only the frequency of media use. Future research should examine the roles of thin ideal internalization and appearance comparison on the relationship between social media use and negative outcomes. This research could inform intervention efforts for reducing the potential harmful effects of media in young adult women with overweight/obesity.

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MERITORIOUS AWARD WINNER

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PREVENTING DIETARY LAPSES IN SOCIAL SITUATIONS: THE POWER OF A JUST-IN-TIME ADAPTIVE INTERVENTION FOR WEIGHT LOSS

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Adherence to dietary prescriptions is vital for success in behavioral weight loss treatments (BWL). BWL targets many of the factors that influence lapses from those diets, but the socializing around food (SAF) continues to be a common trigger for dietary lapses, indicating the need for treatments that can more effectively target those settings. The current study sought to examine the ability of just-in-time adaptive interventions (JITAI) to reduce the number of lapses triggered by SAF in a weight loss seeking population. We hypothesized that opening JITAI specifically targeting SAF would reduce the likelihood of lapsing at the subsequent prompt. Second, we hypothesized that receiving JITAI would moderate the relationship between SAF and lapsing. Overweight/obese participants (n=35) followed the weight watchers diet for 8 weeks while using an app called OnTrack. OnTrack utilizes ecological momentary assessment (EMA) and machine learning to predict dietary lapses and delivers behaviorally-based JITAI to help participants avoid lapsing. After two weeks of use OnTrack predicts when lapses may occur, and sends JITAI for 6 weeks based on those predictions. Effectiveness of JITAI was determined by comparing the likelihood of successfully avoiding a lapse after receiving a JITAI to lapse rates during the first two weeks of the study. Lapses were considered successfully avoided if a participant received and opened an intervention related to SAF and did not report lapsing by the time of their next EMA prompt (~3 hours). Participants received an average of 5 (SD=3.77) JITAI related to SAF over the 6 week period. Approximately 80% of the alerts were opened by participants. Generalized estimating equations revealed that opening a JITAI related to SAF reduced the likelihood of lapsing at the next prompt by 59% ($p=.076$) compared to the rate of lapses prior to receiving JITAI. Receiving JITAI moderated the relationship between SAF and lapsing at the trend-level ($p=.078$), such that there were less reported lapses related to SAF in the 6 weeks when JITAI were sent. These results indicate that interventions related to SAF reduced lapses in participants found to be at risk of lapsing. Although these trends did not reach statistical significance, these findings provide further evidence that JITAI may be a viable remote treatment method to target common triggers of dietary lapses such as SAF. Limitations of this study include sample size, and the assumption that all SAF related JITAI were predicted correctly. Similar trials with larger sample sizes are warranted to further examine this trend, as well as further development of JITAI treatments such as smartphone applications.

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RELATIONSHIP BETWEEN CHANGES IN WEIGHT, PHYSICAL ACTIVITY & EXECUTIVE FUNCTION

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Uninterrupted sitting time (ST) poses a threat to the health and wellness of all adults. However, it is unclear to what extent adults with overweight and obesity can successfully use activity monitors with cognitive behavioral therapy strategies to change physical activity (PA) and ST in an attempt to reduce body weight. Additionally, the exploration of potential behavioral and neurocognitive factors (e.g., executive function) may further explain variability reported in the change in PA and ST.

Purpose: To determine the relationships between change in weight and changes in PA and ST after a 12-week intervention among adults with overweight or obesity. A secondary aim was to examine baseline and change in executive function as predictors of weight loss across the intervention.

Methods: Adults (n=58) aged 18–65 years with a BMI between 25–50 kg/m² received a FitBit® Charge HR monitor and set daily PA goals with a registered dietitian (RD) at baseline; they received weekly dietary and PA education during an in-person class or via an online platform for 12 weeks. Outcomes included ST, PA (steps/day), and weight (pounds, lbs). Executive function was assessed at baseline and after the intervention at week 12 using the Sternberg and Wisconsin Card Sorting tasks. Weight change was defined as participants either losing (>0.0 lbs) or gaining (≤0.0 lbs) weight from baseline to week 12. Descriptive statistics were used to characterize the sample; GLM and regression analyses were used to assess change in outcome variables.

Results: Participants were primarily female (n=54; 93%), White (n=42; 72.4%), and were 45.7 ± 12.0 years with a baseline BMI of 32.1 ± 5.1 kg/m². From baseline to week 12, ST decreased from 545.2 ± 164.8 to 456.5 ± 171.1 min/day (p) and mean weight change among all participants was -1.5 lbs (p=.09); 31 participants lost weight (mean loss -4.8 ± 5.3 lbs) while 21 participants gained or had no change in weight (mean gain 3.4 ± 3.9 lbs). Those who lost weight significantly increased PA (8641 ± 3679 steps) versus those who gained weight over the 12 weeks (6657 ± 2503 steps; $F(1,47) = 4.11, p = .048$). Change in executive function, but not baseline cognitive performance, was a significant predictor of overall weight loss, $F(1, 49) = 7.3, p = .01$.

Conclusion: The findings of this study support the relationship between weight loss with PA, and highlight the importance of examining individual characteristics, such as executive function, that may help to explain behavioral response to PA and weight loss interventions.

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SELF-WEIGHING: AN ECOLOGICAL MOMENTARY ASSESSMENT (SW EMA): DESIGN AND ACCEPTABILITY

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Background: Daily self-weighing (SW) is a promising strategy for weight management in emerging adults. EMA enables psychological and behavioral data to be collected remotely and in real time. However, EMA protocols tend to be burdensome for participants, resulting in greater attrition and missing data. Moreover, no studies to date have used EMA to test the psychological and behavioral consequences of daily SW. This abstract describes the design and acceptability of a pilot RCT testing the psychological and behavioral effects of daily SW.

Methods: Participants were college-aged women, screened for eating disorders, and randomly assigned to daily SW or an active control (daily temperature-taking; TC). Baseline measures included height, weight, and a psychological survey that was repeated weekly for the first month. Participants were required to complete their assigned behavior every day for 3 months. EMA was purposefully front-loaded at the beginning of the intervention (month 1 only), in which participants were asked to respond to 6 signals daily (weeks 1 and 4) and complete 1 assessment at end of day (weeks 2 and 3). Surveys were administered weekly during the first month. Data from the intervention behaviors were wirelessly transmitted to a database that enabled frequent monitoring for adherence.

Results: (month 1 only). Ninety-five interested individuals contacted the study group; 61 received the first screening email and of these, 16 were ineligible (due to not passing eating disorder screening, time commitment or lack of response). Out of 15 who met inclusion criteria, consented, and were randomized, 1 dropped before starting the intervention due to Wi-Fi issues, 1 withdrew in the 4th week, and 1 was noncompliant with the study protocol in the 1st week. Twelve participants (6 in each group) successfully completed the required protocol. Cumulatively, over the first month, compliance rates were 94.6% for EMA1, 86.3% for daily behavior, 88.7% for EMA2, 86.9 for EMA3, 77.4% for EMA4, 83.3% for EMA5, and 67.6% for EMA6. All weekly surveys (48/48) were completed.

Conclusion: Despite challenges of adhering to and completing the rigorous protocol, results suggest this study design was acceptable for college women and effective in mitigating attrition during month 1 and throughout the 3-month study period. Moreover, EMA response rates were acceptable, resulting in a robust and more complete dataset. These findings informed a larger RCT currently underway.

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STRESS IS ASSOCIATED WITH REDUCED EXECUTIVE FUNCTION, GREATER DISINHIBITED EATING, AND HIGHER BMI

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Background: While stress can sometimes reduce appetite, it is also associated with unhealthy food choices, disinhibited eating, and obesity. Resisting the temptation to eat is difficult in an obesogenic environment, and the challenge increases under conditions of stress-induced cognitive load. The specific executive functions and behavioral mechanisms that mediate the effect of stress on obesity are not well understood.

Purpose: The purpose of this study was to identify executive functions that may mediate the association between stress and obesity in women.

Methods: Participants were 249 female Amazon Mechanical Turk workers recruited to be part of a larger study (median education=bachelor's degree; 83% white; mean age=37.2 (SD=11.9)). Stress was measured with Cohen's Perceived Stress Scale (short form). Executive function was assessed with the Behavior Rating Inventory of Executive Function for Adults (BRIEF). We analyzed scales from Roth et al.'s 3-factor solution: metacognition (MI) (problem-solving via planning/organization, utilizing working memory), emotional regulation (ER) (control of emotions, cognitive flexibility), and behavioral regulation (BR) (inhibitory control, monitoring of social behavior). Disinhibited eating was assessed with the Three Factor Eating Questionnaire. Body mass index (BMI) was calculated from self-reported height and weight. We used multivariable linear regression to examine associations between stress, BRIEF, disinhibited eating, and BMI and bootstrap estimates to test for indirect effects of stress on disinhibited eating through each BRIEF factor as well as indirect effects of BRIEF on BMI through disinhibited eating (6 models total). We controlled for age, income, and education in all analyses.

Results: Greater stress was associated with worse executive function on BRIEF MI (B=2.368, p<0.0001), ER (B=1.142, p<0.0001), BR (B=0.599, p<0.0001) as well as greater disinhibited eating (B= 0.246, p=0.001) and higher BMI (B=0.294, p=0.043). There was a significant indirect effect of stress on disinhibited eating through BRIEF MI (indirect effect=0.163, 66.1% of total effect) and ER (indirect effect=0.172, 69.8% of total effect), but not BR. There was a significant indirect effect of BRIEF MI, but not ER or BR, on BMI through disinhibited eating (indirect effect=0.061, 87.2% of total effect).

Discussion: People with high stress may engage in disinhibited eating due to reduced cognitive control or emotional regulation; however, disinhibited eating does not appear to be due to failure to monitor social appropriateness of behavior. Many pathways causing weight gain are possible, including attention bias towards unhealthy food, eating to regulate emotions, failure to monitor intake, or difficulty adhering to nutrition planning goals. Interventions that modulate these may mitigate the effect of stress on weight gain.

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THE CLINICAL UTILITY OF WEIGHT-RELATED TERMS: EFFECTS OF WEIGHT LABELS AND INTERNALIZED WEIGHT BIAS ON TREATMENT INITIATION

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Weight bias contributes to avoidance of health behaviors, engagement in weight gain behaviors, and poorer functioning of metabolic and regulatory systems. Physicians are routinely implicated as sources of weight bias, in part due to poor patient-provider communication. Patient preferences for words used to describe weight have been measured, yet the effect of these terms on treatment initiation has not been tested. This study examines the effect of four commonly-used terms on psychological precursors to treatment initiation, and assesses the effect of internalized weight bias.

Using Amazon's Mechanical Turk (mTurk), 436 adults with BMI > 25 reported baseline internalization of weight bias. Participants then read vignettes describing common experiences at a doctor's office wherein the term used to describe weight was randomly varied (i.e., "weight", "fat", "obesity", or "BMI"). Participants then rated self-efficacy for health behavior change and risk perception of obesity.

Participants were, on average, male (53%), white (75.7%) 35 ± 9.6 years old, with a BMI of 33.9 ± 7.5 kg/m². 80.3% of participants reported at least experiencing at least one form of weight based teasing, discrimination, or harassment.

There were significant effects of the terms "obesity" and "fat". Exposure to the term "obesity" resulted in greater perceived control over obesity ($M_{diff} = 1.4$, $p = .004$) and greater self-efficacy for diet change ($M_{diff} = 10.4$, $p = .007$). Exposure to the term "fat" resulted in decreased understanding of obesity ($M_{diff} = 1.01$, $p = .004$). There were no effects of "weight" nor "BMI".

Baseline internalized weight bias (IWB) moderated the association between term and self-efficacy or risk perception. The main effect of term on illness coherence was moderated by baseline IWB ($p = .03$), such that those with higher IWB reported lower illness coherence after exposure to the term "fat". Internalized weight bias also significantly affected self-efficacy; for those exposed to all four terms, higher IWB was associated with lower self-efficacy ($p < .001$). There was no moderating effect of experienced weight bias.

The words used to describe body weight differentially affect common precursors to treatment initiation. "Obesity" may result in greatest risk perception of obesity and self-efficacy for behavior change in most adults. Internalized weight bias moderates the effect of the term "excess fat"; it may serve as a neutral term for most adults, but has negative effects for those with internalized weight bias. Future research should identify the clinical significance of these effects to inform treatment guidelines and medical training.

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WELLNESS TEAM STABILITY AND LOCAL WELLNESS POLICY IMPLEMENTATION: A LONGITUDINAL STUDY

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Wellness Team Stability and Local Wellness Policy Implementation: A Longitudinal Study

Introduction: Local Wellness Policies (LWP) are school-district documents containing goals for nutrition and physical activity in schools. Cross-sectional studies suggest that schools with wellness teams are more likely to implement LWPs. This study uses a prospective cohort design to examine whether wellness team stability over time is associated with change in LWP implementation in a large, state-wide sample of schools.

Methods: School administrators/school wellness leaders in Maryland responded to a biennial online survey (Time 1, 2012–2013; Time 2, 2014–2015 school years). 17-items on implementation of wellness policies and practices in a Likert scale (fully=3, partially=2, under development=1, not implemented=0) were summed at Time 1 and 2, and a change score was calculated. "Wellness team stability" was categorized into four groups according to wellness team presence at two time points: "established" (both timepoints, 35%), "new" (Time 2 only, 22%), "discontinued" (Time 1 only, 13%), and "never" (neither timepoint, 30%). Paired t-tests compared wellness implementation between two times within each stability group; multi-level regression models compared LWP implementation across groups, accounting for clustering within school districts and adjusting for school demographics.

Results: Of 1349 eligible schools, 744 had complete Time 1 data (55%), 799 Time 2 (59%), and 441 both (34.2%). Schools were: 69% Elementary, 56% suburban, 35% of student body was majority (≥75%) African American/Hispanic, and 28% majority (≥75%) low-income. Time 1 mean (SD) implementation score for wellness teams was 32.0 (11.5) "established," 17.6 (11.4) "new," 28.3 (11.4) "discontinued," and 15.4 (10.7) "never." At both time points, "established" teams maintained high LWP implementation, and "never" teams maintained low implementation with no significant change over time ($p > 0.05$). Compared to "never", "new" schools experienced a greater increase in LWP implementation ($B=9.9$, $p<0.001$), "discontinued" schools decreased LWP implementation over time ($B=-10.8$, $p<0.001$).

Conclusions: Compared to schools that never had a wellness team, schools with new teams improved LWP implementation, and schools with discontinued teams declined. Schools with established teams maintained a high level of implementation. Forming and maintaining wellness teams encourages LWP implementation, and should be considered an evidence-based strategy for school wellness promotion.

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WHAT DOES “DIETING” REALLY MEAN? A DAILY DIARY STUDY OF BEHAVIOR

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Dieting is often considered, by professionals and laypeople alike, to be a means of weight control or weight loss. Thirty to fifty percent of women report that they are dieting at any given time. Dieting is often recommended as a means of weight loss for the two-thirds of Americans who are overweight. Yet research consistently shows that self-reported dieting does not result in sustained weight loss. Understanding what “dieting” means in terms of behavior is crucial to resolving this discrepancy. However, the literature on an operational definition of dieting remains somewhat unclear. This study contributed to this literature by assessing the *daily* weight control strategies and dietary intake of people who self-identify as dieting. College women ($N = 266$) provided reports of their current eating pattern(s) (dieting, “watching what you eat,” and/or “eating healthy”) followed by three daily diaries (24-hour recalls of dietary intake and weight control strategies) elicited from them on randomly selected days during a one-month period. At baseline, 55 individuals endorsed current dieting, current “watching,” and current “eating healthy,” with 122 individuals endorsing only current “watching” and current “eating healthy,” but not dieting. Just 3 individuals endorsed current dieting only, and 31 endorsed no eating pattern. “Dieters” were participants who endorsed dieting, plus “watching” and “eating healthy,” while “non-dieters” were participants who endorsed “watching” and “eating healthy” but not dieting. The dieters’ group mean BMI was in the overweight range; the non-dieters’ was in the normal weight range. Those who were dieters at baseline did not consistently endorse dieting across daily diaries. Nevertheless, dieters reported fewer daily calories, and more overall weight control strategies, including more *healthy* weight control strategies, than non-dieters. Across groups, participants’ weights did not change significantly during the one-month study. This study’s daily diary methodology was uniquely suited to the question of what dieters typically do to influence their weight. Dieters do appear to engage in weight control strategies which could result in weight loss; however, their reports of whether they are dieting are inconsistent across days, suggesting that difficulty in sustaining behavior impedes effective weight control. These results have clinical and research implications in the area of weight loss.

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ACUTE EFFECTS OF INTERRUPTING SITTING ON DISCOMFORT AND ALERTNESS OF OFFICE WORKERS

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Introduction: Sedentary behavior has been associated with impaired musculoskeletal discomfort and fatigue. Sedentary office workers sit as much as 75% of work time placing them at increased risk for discomfort and impaired alertness. Little is known on the acute effects of sedentary behavior on such outcomes and/or whether interrupting sedentary behavior prevents impairments in discomfort and alertness. The aim of this study was to compare the effect of four hours of uninterrupted sitting against four hours of sitting interrupted with 10 minute hourly bouts of standing or pedaling on perceived alertness and discomfort among sedentary office workers.

Methods: Fifteen middle-aged (age 36.7 ± 5.5 years) sedentary workers completed three conditions: (1) four hours of uninterrupted sitting; (2) four hours of sitting interrupted with 10 minutes of standing each hour; and (3) four hours of sitting interrupted with 10 minutes of pedaling each hour. Measures of alertness (Stanford Sleepiness Scale) and discomfort (General Comfort Rating Scale) were collected four times each hour for four hours. Within- and between-group differences in comfort and alertness were evaluated using linear mixed effects regression models. Tests of simple effects and pairwise comparisons were used for post-hoc analyses of interaction (condition x time).

Results: Discomfort significantly increased over time in all three conditions. However, the increased discomfort observed in the uninterrupted sitting was significantly greater compared to both the standing ($p < 0.001$) and pedaling ($p < 0.001$) conditions. There were no between-group differences in alertness over time. However, short-lived improvements in alertness were observed immediately following the 10-minute standing and pedaling interruptions.

Conclusions: Interrupting sedentary work with brief bouts of standing and pedaling had a positive impact on both discomfort and alertness. Further research is needed to determine the minimum dose (frequency, intensity, time and type) of sedentary interruptions necessary to support optimum health and work productivity of highly sedentary employees.

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K-STATE MOVEMENT CHALLENGE: ENHANCING THE REACH AND IMPACT OF A WORKSITE PHYSICAL ACTIVITY INTERVENTION

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Purpose: The worksite is an ideal place for interventions to increase physical activity since it is where many individuals spend most of their day. The Movement Challenge is one such program that was started at Kansas State University in 2015. The purpose of this study is to evaluate the successes of the program in the first few years and identify areas for improvement to increase participation across campus in upcoming years.

Methods: Faculty and Staff from all departments were invited to register for the challenge. This was structured as a competition between departments for who could log the most steps. Human Capital Services started this initiative in 2015 with minimal funds, and formed a partnership with the Kinesiology Department after the initial year. Before the second year of the program, an evaluation was conducted to identify areas to improve the program to increase participation from K-State employees across campus.

Results: The evaluation results led to multiple changes being made, including: recruiting Captains from each department, issuing weekly challenges, disseminating a weekly newsletter, expanding the challenge from four to six weeks, modifying the step-reporting process, and adding a leaderboard for percentage of employees participating. Total participation in the program at any time increased by 38% from Year 1 to 2, with 646 new participants who did not participate the previous year. Departments with Captains also reported higher participation in the program, and the number of Departments with Captains increased from 17 to 57 from year 1 to year 2, and preliminary data from year 3 indicates that number has now increased to 77. The number of departments with any participation has also increased from 87 in the initial year to 140 in year 2 and 150 in the current year. Areas identified for future change include engaging more male employees and incorporating additional recognitions for people who meet their individual step goals.

Conclusions: Forming a partnership between two groups on campus to sponsor the K-State Movement Challenge increased the impact and reach of the program. These results suggest that regular evaluation of worksite interventions is key to improving their quality and impact for the employees. K-State will continue to evaluate on an annual basis and modify the program to meet the needs of our employees and ensure faculty and staff from across the campus are reached.

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PREDICTING POST-TRAUMATIC STRESS DISORDER: A MACHINE LEARNING APPROACH

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Introduction: Post-Traumatic Stress Disorder (PTSD) is an anxiety disorder that involves a specific set of symptoms which develop after experiencing, witnessing, or confronting stressful and traumatic events. With repeated exposure to such traumatic events, firefighters are at great risk for developing post-traumatic-stress (PTS) symptoms and related problems such as alcohol misuse, especially if they use alcohol as means of coping with stress. The purpose of our study was to build an automated predictor of PTSD in municipal firefighters, using three machine learning algorithms.

Methods: 740 municipal firefighters completed assessments of PTS symptoms, alcohol consumption, alcohol problems, drinking motives, and coping with stress as part of a larger study. We used data on PTS symptoms and alcohol related outcomes to train and test the machine learning algorithms, including Neural Network (NN), Naïve Bayes Method, and Decision Tree, to build and validate the automated predictor of PTSD in municipal firefighters.

Results: The results of this study indicated that the automatic predictors can successfully predict PTSD with the accuracy of 88.65% using Naïve Bayes and 91.76% using both NN and Decision Tree.

Conclusions: Even though the results are not 100% perfect, they are highly promising and show a great potential for quick and early identification of firefighters susceptible to PTSD and potentially alcohol related problems, which could help focus on less intense interventions among firefighters, such as education and simple advice rather than counseling, diagnostic evaluation, and treatment in more severe cases when firefighters with health related problems are identified in later stages.

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ASSESSING SEVERITY OF ADVERSE CHILDHOOD EXPERIENCES IN CHRONIC PAIN PATIENTS

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Chronic pain, pain lasting greater than 3 months, is one of the most prevalent and costly conditions in US health care—afflicting 35% of the population and costing greater than \$635 billion dollars annually. Chronic pain is also associated with psychosocial comorbidities, such as depression and anxiety. Adverse childhood experiences (ACE) is a known factor that increases the likelihood of developing psychological dysfunction in adulthood. Children exposed to these events have poorer health in adulthood and are more likely to report headaches and other chronic pain syndromes. The aim of this study was to evaluate the association of pain related constructs (pain intensity, interference, affective pain and pain catastrophizing) and physical and mental health functioning with a new instrument for recording ACE experiences: The Brief Adverse Childhood Events Survey (BRACES), which evaluates exposure to six types of ACE (physical abuse, sexual abuse, emotional abuse, emotional neglect, physical neglect and witnessing parental violence). In total, 129 individuals with chronic pain (65.9% female) completed the BRACES while presenting for a treatment appointment. Participants were dichotomized into two groups: those that reported no ACE events and those that reported any ACE event (68% reported any ACE). No significant differences in pain intensity, interference, catastrophizing and affective pain (higher emotional ratings of pain) were found between groups. Those that answered yes to any ACE event were further analyzed via an index of severity of abuse (this index was calculated by averaging responses about severity for each type of ACE). Using hierarchical regression, the ACE severity index provided significant incremental prediction of affective pain ($p < .001$, $\Delta R^2 = 0.07$), psychological distress ($p < .001$, $\Delta R^2 = 0.17$) and mental health functioning ($p < .001$, $\Delta R^2 = 0.05$) when controlling for baseline pain and demographics.

Conclusions: In this sample, a simple dichotomization of those reporting no ACE or any ACE was not sufficient to discriminate scores on pain, physical and mental health constructs. However, the severity of the reported ACE experiences in childhood was associated with increased pain and psychological dysfunction in adulthood—this is consistent with the literature on ACE and psychological functioning and pain. The BRACES instrument provides a unique tool for assessing severity of ACEs.

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BUILDING AN E-HEALTH PROGRAM FOR CHRONIC PAIN MANAGEMENT: EXPERIENCES AND INPUT FROM THE HEALTH CARE PROVIDERS.

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e-health programs carry promise to support self-management of chronic illness, including chronic pain. Whether such programs succeed depends not only on patients' acceptance and adherence, but also on health care providers'; attitudes and willingness to support the use of such programs. Health care providers working with chronic pain have a focal role in supporting patients'; coping with pain, and their input is therefore essential for the development and utility of any tool in management of chronic pain.

Using service design methods, the present study seeks to: 1) explore health care providers'; experiences and challenges in chronic pain management, and 2) identify health care providers'; needs, requirements and potential challenges to usage of a chronic pain e-health program.

Semi-structured individual interviews were conducted with healthcare providers (N=12; i.e., an anaesthesiologist, general practitioners, psychologists, a psychiatrist, physical therapists, a registered nurse and an occupational therapist) across health service levels, all working within chronic pain management.

The interviews provide insight into health care providers'; challenges and unmet needs in management of chronic pain, as well as their prerequisites and necessities for making a chronic pain e-health program usable and efficient. The interviews reveal that health care providers often feel at a loss due to the complexity of the many challenges presented by chronic pain patients. Findings indicate a need for a common explanatory model for chronic pain across health care providers. Findings also underline lack of time to explain and provide a biopsychosocial understanding of pain for patients, and to guide the promotion and acquisition of appropriate pain coping strategies. The results emphasize the utility and potential benefit of an e-health program in a) structuring treatment and follow-up of chronic pain patients in health care practices, and b) identifying important aspects of self-management of chronic pain. Health care providers'; preferences for the intervention's content, context of use, and platform type are identified, as well as potential challenges and obstacles for implementation and use of such a technological program in health care practices.

In conclusion, findings present valuable guidance from health care providers to be considered in building, prototyping and testing a chronic pain e-health self-management program.

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DECREASES IN PAIN CATASTROPHIZING AND INCREASES IN PAIN RESILIENCE ARE RELATED TO BETTER PAIN REHABILITATION OUTCOMES

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Although reductions in pain catastrophizing have been related to better treatment outcomes for individuals with chronic pain, to date these effects have not been examined alongside simultaneous changes in pain resilience. Forty-four women and 45 men underwent an 8-week interdisciplinary functional restoration program and completed the following measures at admission and discharge: Pain Catastrophizing Scale, Pain Resilience Scale, Quebec Back Pain Disability Scale, and the Short Form Health Survey (SF-36). Separate hierarchical linear regressions were conducted to predict discharge ratings on the Quebec Back Pain Disability Scale and the SF-36 subscales. For each analysis, baseline (admission) score on the relevant outcome measure was entered into the first block. In the second block, (discharge minus admission) changes in catastrophizing and resilience were offered as potential predictors using a stepwise procedure. Results of the analyses indicated that: 1) improvement in SF-36 mental health scores were significantly related to increases in pain resilience ($\beta = 0.236$, $p = 0.034$), but not to changes in pain catastrophizing, and 2) reductions in back pain disability were significantly related to decreases in catastrophizing ($\beta = 0.177$, $p = 0.013$) and marginally related to increases in resilience ($\beta = -0.13$, $p = 0.068$). This study supports the growing body of literature that highlights the importance of targeting both catastrophizing and resilience in the treatment of chronic pain.

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EXPERIENCES OF DISCRIMINATION IN HEALTHCARE AND PAIN COPING AND INTERFERENCE AMONG AFRICAN AMERICANS WITH OSTEOARTHRITIS

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Introduction: Social Stress Theory posits that coping resources may buffer the association between prejudice-related stress and negative health outcomes, but little work has been done to understand the relationship between discrimination and coping in the context of pain. This study explores how experiences of discrimination in healthcare settings relate to participants'; rumination and perceptions of pain interference.

Methods: Participants ($n=62$) were a subset of adults enrolled in a clinical trial of Pain Coping Skills Training for African Americans with Osteoarthritis (OA) who had completed variables included in these analyses to date. We conducted independent t-tests to assess differences between participants who reported any past experiences of racial discrimination in healthcare on the Personal Discrimination Multi-item measure ($n=24$, 38%) versus those who reported none on two pain coping and perception variables: ruminating on one's pain and pain interference (the degree to which one's pain interferes with daily activities). Rumination was assessed with a subscale of the Coping Strategies Questionnaire, and pain interference with the PROMIS 6-item short form; higher scores indicate more rumination and interference. We then used ANCOVA to examine group differences while controlling for lower extremity pain severity.

Results: There was a significant difference in rumination scores between those who reported past discrimination ($m=6.33$, $sd=4.00$) and those who did not ($m=8.67$, $sd=4.38$), $p=.04$. The trend remained present when controlling for pain severity ($adj\ m=6.67$ and 8.28 , respectively), $p=.15$. There was also a significant difference in pain interference between those who reported discrimination ($m=60.75$, $sd=7.31$) and those who reported none ($m=64.95$, $sd=6.39$), $p=.02$. The trend remained when controlling for pain severity ($adj\ m=62.06$ and 63.79 , respectively), $p=.16$.

Discussion: African Americans with OA who reported past experiences of discrimination in healthcare reported less use of rumination and less pain interference, as compared to those who reported no past discrimination experiences. These findings suggest that resilient responses to discrimination in healthcare may shape individuals'; pain coping and perception, making them less likely to ruminate and to view their pain as interfering with daily activities. Future research should continue to explore the links between discrimination, resilience, and pain coping and interference.

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FEELING THE PRESSURE TO BE PERFECT: LINKS BETWEEN PERFECTIONISM, SOMATIZATION, AND PAIN IN A NON-CLINICAL SAMPLE OF ADOLESCENTS

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Introduction: Research indicates that perfectionism is associated with indicators of psychological adjustment among adolescents; however, perfectionism's links with physical health outcomes (e.g., pain and somatization) is less clear. The paucity of research is surprising given the well-established relations between psychological factors/personality traits and physical health outcomes and the mounting clinical evidence of perfectionistic tendencies among youth with chronic pain. This cross-sectional study examines links between several forms of perfectionism [self-oriented perfectionism (SOP; perfectionism pressures directed toward oneself), socially prescribed perfectionism (SPP; perfectionism pressures experienced from one's environment), effortless perfectionism (EP; pressure to appear perfect without seeming to exert effort)], somatization, and chronicity of pain in a non-clinical sample and considers gender differences.

Method: Participants included 9-12th graders (52% female; $Age=15.94$; $SDage=1.07$). Of the total sample, $n=60$ (60% female; $Age=15.95$; $SDage=1.10$) reported pain in the last month and were included in analyses. Participants completed the Child-Adolescent Perfectionism Scale [CAPS;subdomains=SOP, SPP], Effortless Perfectionism Scale (EP), and Child Somatization Inventory (CSI). Participants reported whether they experienced pain in the last month and whether pain initiated "less than 3 months" ago (acute) or "3 or more months" ago (chronic).

Results: The SPSS PROCESS dialog was used to investigate moderation models [95% bias-corrected bootstrap confidence intervals ($k = 5000$)]. Higher levels of SPP ($B = 1.04$, $SE = .47$, $p = .03$) and EP ($B = 1.57$, $SE = .73$, $p = .03$) was associated with more somatic complaints for the overall sample. For females only, SOP was linked to more somatic complaints ($B = .08$, $SE = .18$, $p = .00$) and chronic pain ($B = -9.43$, $SE = .388$, $p = .02$) while higher levels of EP was linked to acute pain among males ($B = 6.63$, $SE = 2.59$, $p = .01$).

Discussion: Findings indicate that certain types of perfectionism are differentially linked to physical outcomes based on gender. Intra-personal forms of perfectionism (SOP) are particularly salient for females and linked to more somatic complaints and chronic pain. Alternatively, interpersonal forms of perfectionism (SPP, EP) were linked to more somatization and shorter duration of pain in males. It is possible that females tend to internalize perfectionistic tendencies and associated emotional struggles which may result in physical manifestations of chronic stress. Alternatively, males may be more susceptible to external pressures to be perfect and focused on making it look easy; this tendency may be exacerbated in the context of a struggle such as acute pain. However, longitudinal studies are required to determined causal relations.

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MIGRAINE SELF-MANAGEMENT ACTIVITIES AND THE RELATIONSHIP BETWEEN LOCI OF CONTROL, AND PHYSICIAN MIGRAINE MANAGEMENT.

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Introduction: Few research studies examine the link between avoidance of migraine triggers and patient feelings regarding internal (migraine self-management) and external loci of control (perception of physician treatment). We hypothesized that both internal and external loci, as rated by participants, would be significantly related to whether or not a migraineur reported taking active steps to avoid migraine triggers.

Method: 4,502 U.S. adult migraine participants completed the 2015 Migraine.com survey. 4,341 participants identified specific migraine triggers and steps in migraine self-management (e.g. make lifestyle/diet changes, actively seek out information on migraine medications). Locus of control ratings were assessed across multiple questions using a 7-point Likert scale.

Results: Chi square tests on migraine self-management and perceived internal locus of control ($X^2(24)=43.3$, $p < .05$), showed a significant relationship to whether a participant took active steps to avoid specific migraine triggers. However, the items related to external (physician) locus of control (e.g. physician evaluation and treatment of symptoms) did not show a significant relationship with active migraine self-management ($X^2(24)=23.9$, $p > .05$).

Discussion: Avoidance of migraine triggers and migraine self-management showed a relationship with feelings of internal loci of control but did not show a relationship with feelings of external loci of control. Further examination of perceptions of loci of control may provide intervention points to help providers encourage patients to take more active steps in preventing and reducing their migraines through self-management.

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CITATION AWARD WINNER

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PRELIMINARY RESULTS OF A VIRTUAL PERSPECTIVE-TAKING INTERVENTION TO REDUCE RACE AND SES BIASES IN PAIN TREATMENT DECISIONS.

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Black and low SES patients are less likely to receive guideline-concordant pain care than White and high SES patients, respectively. We developed a novel provider-focused intervention to reduce these disparities. Physician residents/fellows were recruited for this randomized controlled trial that assessed treatment biases at baseline (T1) and one-week post-intervention (T2). Physicians who were biased at T1 - i.e., showed systematic differences in their treatment decisions across patient race (Black/White) and/or SES (low/high) - were randomized to an individually-tailored perspective-taking intervention or control condition. The intervention provides personalized feedback about physicians' biases, dynamic interactions with computer-simulated patients tailored to physicians' unique biases, and videos depicting how pain has impacted the patients' lives. We are currently in year 4 of a 5-year trial testing the intervention in a large national sample. We present preliminary results characterizing the study sample, extent and nature of treatment biases at T1, and demographic and clinical characteristics of physicians who were biased at T1. Five hundred and two physicians (55% male, age = 29.7 ± 3.1 years) have completed the study. Most identified as non-Hispanic (90%) and White (64%) or Asian (25%). Most were in residency training (75%) with a moderate amount of clinical experience with pain (mean = 41.39 ± 23.93 [0–100 scale]). Over one-third (n=191) of the sample demonstrated a race and/or SES bias when making treatment decisions at T1. The "bias" group had a larger proportion of White physicians than the "no-bias" group (72% vs. 64%). Of those in the "bias" group, 121 (63%) demonstrated a race-x-SES bias, 45 (24%) a race-only bias, and 25 (13%) an SES-only bias. A higher proportion of male physicians demonstrated race-x-SES (64% male) and SES-only (56% male) biases, whereas a higher proportion of female physicians demonstrated a race-only bias (47% male). No differences were observed in the distribution of physicians by ethnicity (Hispanic vs. non-Hispanic) or race (White vs. non-White) across the bias categories. These preliminary results highlight the feasibility of our novel methods and suggest that patient race and SES have unique and interactive effects on physician decisions for pain care. These results also suggest that physician demographic characteristics are important considerations when assessing and intervening on pain treatment biases.

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REDUCING DISTRESS IN PATIENTS WITH CHRONIC PAIN: IS THE PAIN TOLERANCE INDEX A USEFUL MEASURE?

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As it is often impossible to alleviate chronic pain completely, patients are routinely asked about the highest acceptable or tolerable level of pain to help establish treatment goals. There is an underlying assumption that reducing pain to an acceptable level should help alleviate distress. This is reasonable, given that there is a strong association between pain and distress, such that more severe pain predicts greater distress. The pain tolerance index (PTI) is a measure of how much a patient's pain needs to change in order to be tolerable. Theoretically, a lower PTI should be linked to lower distress. However, this has yet to be empirically tested. The current study aims to establish that 1) a lower PTI predicts less distress and 2) this relationship remains significant, even when accounting for current pain level. Veterans with chronic pain (N = 205; 76.6% male) participated in a six-week pain management group. At the end of each session, participants rated their current pain, current distress, and highest tolerable pain on a Likert scale ranging from 0–10, with higher numbers representing greater pain and distress. The PTI was calculated by taking the difference between current pain and highest tolerable pain for each participant. Regression analysis of data derived from week six (post-treatment) indicated that a lower PTI significantly predicted less distress, accounting for 8.5% of the variance in distress. However, when current pain was added to the model, PTI was no longer significantly related to distress. Once current pain is taken into account, PTI does not significantly explain variability in distress among patients with chronic pain. Though PTI may be helpful for setting pain management goals in other contexts (e.g., cancer-related pain), these results suggest that attempting to decrease pain to an acceptable level may not be an effective technique for reducing distress in patients with chronic pain. Implications of these results will be discussed including 1) the need for operational definitions of acceptable or tolerable pain and 2) alternative targets for decreasing distress among patients with chronic pain.

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RELATIONSHIP BETWEEN SELF-COMPASSION AND PAIN RESILIENCE IN THE CONTEXT OF ACUTE EXPERIMENTAL PAIN

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Self-compassion involves self-kindness, mindfulness and a recognition that inadequacies and suffering are shared human experiences. Cross-sectional studies have revealed that higher levels of self-compassion have been associated with greater adaptive pain coping, higher pain acceptance and less pain-related disability. The relationship between self-compassion and pain-specific resilience has yet to be examined. This study aims to assess the extent to which self-compassion relates to pain resilience and the relative contribution of these so-called protective factors to the prediction of pain catastrophizing and pain intensity in the context of experimental pain. Fifty-eight undergraduate students (53 = females; 5 = males) underwent an acute experimental pain induction using the cold pressor task. The Pain Resilience Scale and the Self-Compassion Scale-Short Form were completed prior to the cold pressor task while the Pain Catastrophizing Scale and a NRS measure of pain intensity (0 = no pain; 100 = maximum pain) were completed immediately afterward. Correlational analyses and standard multiple regression analyses were conducted. Higher levels of self-compassion were moderately related to higher levels of pain resilience ($r = .31$, $p = .02$). Neither self-compassion nor pain resilience predicted pain intensity. Self-compassion did not predict pain catastrophizing, but pain resilience was a significant predictor ($\beta = -.33$; $p = .017$). Higher levels of pain catastrophizing were moderately related to higher pain intensity ($r = .43$; $p < .001$). These findings suggest a possible mediational model in which self-compassion would relate to pain resilience which, in turn, would contribute to lower levels of pain catastrophizing which would relate to lower pain intensity. This proposed model remains to be tested among a larger sample. Interventions aiming to increase self-compassion may prove to be helpful within programs targeting pain-specific resilience as part of clinical pain management.

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USER IDENTIFIED NEEDS AND REQUIREMENTS IN THE DEVELOPMENT OF AN EHEALTH PAIN MANAGEMENT INTERVENTION

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Background: A growing body of evidence supports the efficacy of eHealth interventions in coping with a variety of illnesses and disorders, including short- and long-term pain conditions. The efficacy and continued use of eHealth treatment programs depend not only on content and technology but also on the patients'; motivation, acceptance and adherence. Despite interest from patients, existing chronic pain eHealth studies have experienced high attrition rates. New interventions are necessary, focusing specifically on patients'; needs, perspectives, expectations and context of use.

Aim: The present study seeks to identify the unmet informational and support needs of patients with chronic pain, and to investigate how an eHealth intervention can be designed to address these needs. In doing this, caregivers experiences and needs are included. Users'; requirements for functionality and design are also explored.

Method: Individual interviews were conducted with patients living with different chronic pain conditions (N=16; e.g., neuropathic pain, musculoskeletal pain and rheumatic pain). Treatment backgrounds varied, ranging from general practitioners'; visits and physical therapy in primary health care to more specialized treatments in secondary health care. Caregivers (N=5) were also interviewed to provide insight into caregivers'; experiences, needs and perspectives and to gain a deeper understanding of the patient group.

Results: Interviews provided insight into needs and wishes of patients and their caregivers living with chronic pain related to everyday life and coping. The need for mastery, normalization and activity pacing were highlighted. Furthermore, the need for a positive distraction, especially in relation to high pain levels, stressful situations and struggles with sleep were expressed by both groups. Preferences as to design of an eHealth tool, type of platform and privacy issues were identified, showing accessibility to be a key factor for user adoption.

Conclusions: The study provides important knowledge about the everyday needs of patients with chronic pain and their preferences in relation to a digital pain management intervention. Possible areas where an eHealth intervention might support existing treatments, such as learning and mastery courses, are also identified. Results give direction for further development and prototyping of an intervention that will ultimately be tested in a randomized controlled trial.

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PATTERNS IN MODE OF PHYSICAL ACTIVITY AND DIABETES RISK AMONG LATINOS IN THE U.S.

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Latinos are disproportionately affected by type 2 diabetes mellitus. Randomized clinical trials indicate that increasing physical activity among those with diabetes can improve glucose and lipid levels, insulin resistance, and weight reduction goals. While these studies have demonstrated that more active living can reduce chronic health disease risk, most of the research has focused on leisure-time physical activity. Little empirical evidence exists documenting if the same health-enhancing effects is evident across distinct modes of physical activity. Understanding the impact of other modes of physical activity (PA), such as transportation and work physical activity, on health may be especially important among racially/ethnically diverse populations who may have less time for leisure time physical activity given these groups, on average, are more socially disadvantaged than non-Latino whites. In prior studies from our research team (under review), we showed that vigorous work physical activity made up a significantly higher proportion of all modes of physical activity among foreign-born Latinos (19.51%) compared to U.S.-born Latinos (13.03%) and non-Latino whites (15.03%) and were significantly more likely to meet physical activity guidelines through transportation physical activity. The present study builds on this earlier work and examines how leisure, work, and transportation physical activity, are independently associated with diabetes prevalence among Latinos participating in the 2007–10 NHANES. The weighted means and percentages of key sociodemographic characteristics and prevalence of each PA outcome and diabetes status will be presented and log binomial models fit to examine associations between each mode of PA and diabetes adjusting for relevant covariates. We hypothesize that diabetes prevalence will differ across each mode of physical activity, but will show higher diabetes prevalence among those engaged in the lowest levels of all modes of physical activity. Investigating patterns in physical activity and diabetes for Latinos compared to non-Latino Whites could shed light on acculturation-related processes related to changes in health status and health behaviors for immigrant-origin populations.

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A QUALITATIVE STUDY EXPLORING PERCEPTIONS SURROUNDING PHYSICAL ACTIVITY MONITORS IN USERS AND NON-USERS

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Introduction: Wearable physical activity monitors are gaining popularity and use in health behavior research. However, the general perceptions of these monitors is unclear. Therefore, the purpose of this study is to qualitatively explore the perceived psychological constructs and health benefits of wearable physical activity devices.

Methods: Participants were 21 adults (24 - 60 years; 57.1% female; 95.2% non-Hispanic/Latino; 85.7% white). All engaged in moderate to high levels of physical activity. Six focus groups were conducted with 3 - 5 exercisers, with half composed of those who used wearable monitors and half composed of non-users. Each focus group lasted between 30 and 60 minutes. Each focus group was audio recorded, transcribed, and analyzed using an iterative approach creating first-level descriptive codes followed by second-level analytic codes. A combination of these codes allowed for generating broader themes.

Results: *General perceptions.* Non-wearable users described wearable monitors to be costly and inaccurate. In addition, they viewed users as being overly responsive to popular trends, and materialistic. Wearable users valued these devices for tracking activity, personal accountability, goal setting, and validation. Despite this, wearable users expressed a cyclical relationship between using their monitors to help achieve goals, then reducing use before returning to the monitors. *Psychological constructs.* Non-wearable users expressed a number of positive feeling towards wearable activity monitors as they provide a sense of achievement, pride, and happiness. On the other hand, they described these devices as bringing added stress, dependency, and reflecting attention seeking behaviors. While wearable users had positive emotional reactions towards their devices, they also mentioned feelings of co-dependence on their device eliciting anxiety, guilt, and added stress.

Health benefits. If characteristics of wearable devices changed (i.e., user friendliness and more affordable), non-wearable users might be motivated to use them to engage in more physical activity, but still questioned the sustainability of this use. Both wearable and non-wearable users supported the use of devices in the medical field as they would be helpful for providers and patients – if they could be more affordable.

Conclusion: Both users and non-users held a number of positive opinions with regard to wearable activity monitors. Users emphasized the benefits for motivation and accountability, while non-users emphasized high cost, poor accuracy and stigmas for use. Interestingly, both groups were concerned that the devices would invoke feelings of guilt and dependence. These data suggest a number of areas for further investigation to better leverage activity monitors to increase physical activity behavior.

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A RANDOMIZED STUDY TESTING INCREMENTAL VERSUS ADAPTIVE GOAL SETTING USING AN INCENTIVE-BASED MHEALTH APP

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Objective: The Carrot Rewards application ('app;') was developed as part of a novel public-private partnership to reward Canadians with loyalty points (e.g., groceries) for walking more. The purpose of this study was to examine different methods of setting daily step goals (i.e. incremental vs. adaptive goal setting).

Methods: A 26-week randomized study was conducted in which 1,722 participants were enrolled in the Carrot Rewards walking program between November 1st and 14th, 2016. During the two-week baseline period, mean steps/day were calculated for each participant. Thereafter, participants earned incentives (\$0.04 Cnd) every day they reached their baseline mean (i.e. level of first daily step goal). Participants earned additional points (worth \$0.40 Cnd) for meeting their step goal 10 out of 14 days. Upon meeting the 10-day contingency, participants could increase their daily goal by 500 steps, with the objective of gradually increasing their number of steps by 3,000 each day ('incremental goal setting'). At Study Week 15, about one out of every eight users was randomly selected to continue with the incremental goals approach for 12 more weeks. The remaining users were exposed to the new, adaptive goal setting approach. With the adaptive goal setting, daily step goals were *re-calculated monthly* (i.e. mean steps/day from the past 30 days) to better reflect recent activity patterns (e.g., with changing seasons, injury, etc.). The primary study outcome was the difference in mean steps/day between the two groups at Study Week 26, and was analyzed using independent t-tests.

Results: Among users enrolled in the Carrot Rewards walking program, 655 had complete data sets (4 valid days at baseline, Study Week 3 and 26; 38%). Participants were predominantly female (64%) and aged 35 years. At Study Week 15, 90 users (14%) continued with incremental goal setting, while 565 received adaptive goals. While there was no statistically significant difference between the groups at Study Week 26 (difference = 514 steps/day, $p = .213$), users receiving adaptive goals walked more steps per day from the baseline period to Study Week 26 (766 steps/day) compared to those in the incremental goal group (230 steps/day).

Conclusions: While promising, the adaptive goal setting approach did not increase physical activity to a greater extent than the incremental approach. Future research should focus on the differential effects over longer periods.

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CITATION AWARD WINNER

A220

6:30 PM-7:30 PM

COMPARISON OF PHYSICAL ACTIVITY AND OUTDOOR PLAY ENVIRONMENTS OF FAMILY CHILDCARE HOMES AND CENTERS IN NEBRASKA

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Purpose: Since 2010, Nebraska state and local partners have collaborated to offer the Nutrition and Physical Activity Self-Assessment for Childcare (Go NAP SACC) to family childcare homes (FCCH) and childcare centers (CCC) across the state. However, FCCHs and CCCs have unique characteristics that may impact the type of physical activity environment they offer to the children they serve. For example, CCCs usually have bigger facilities and more staff compared to FCCHs. To date, no research has examined differences that may exist in the physical activity environments between FCCHs and CCCs in Nebraska. Identifying these differences is critical to understanding how to best support each setting to achieve best practices. Therefore, the purpose of this study was to assess and compare differences in the physical activity environment of FCCHs and CCCs in Nebraska.

Methods: FCCHs ($n = 201$) and CCCs ($n = 102$) participated in the Go NAP SACC pre-evaluation during 2014–2016. This study examined the results from 2 of the 5 Go NAP SACC self-assessments: Infant and Child Physical Activity and Outdoor Play and Learning. Answers were coded as 1 = barely met, 2 = met, 3 = exceeded, and 4 = far exceeded childcare standards based on Go NAP SACC recommended best practices. Multivariate analyses were conducted to evaluate differences.

Results: The result indicated that FCCHs and CCCs both performed significantly better than their counterparts on several items. FCCHs reported higher ratings in respect to the following items: 1) the amount of time providing for children's indoor and outdoor physical activity ($p < .01$); 2) offering tummy time to non-crawling infants (.028); 3) the amount of adult-led physical activity provided to children each day ($p < .01$); 4) the time limit that children were asked to remain seated ($p = .044$); 5) covering a variety of physical activity topics during professional development ($p = .003$); and 6) the amount of shade provided outdoors ($p = .012$). CCCs reported higher ratings in: 1) provision of outdoor play ($p = .015$); 2) the amount of time providing for outdoor play each day ($p = .032$); 3) the use of the outdoors for a variety of activities (free play, structured learning; $p = .03$), and 4) the number of play areas in outdoor play spaces (sand box, swings; $p = .036$). Both providers FCCHs and CCCs scored relatively lower on education and professional development and policy dimensions across physical activity and outdoor play practices.

Conclusions: Interestingly, FCCHs showed significantly higher achievement of childcare standards in relation to infant and child physical activity in general whereas CCCs reported higher scores in regards to outdoor play and learning. Future research should examine if there are ways FCCHs and CCCs can learn from each other in order to continue to improve quality in these areas.

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DEVELOPMENT OF SMART WALK: A CULTURALLY RELEVANT SMARTPHONE-BASED PHYSICAL ACTIVITY PROGRAM FOR AFRICAN AMERICAN WOMEN

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Background. African American (AA) women perform low physical activity (PA) levels (i.e., 36% achieve the national aerobic PA guidelines) and experience a high burden of associated cardiometabolic disease conditions (i.e., 82% are overweight/obesity, 48% have cardiovascular disease, and 10% have type 2 diabetes). To address these PA and cardiometabolic disease health concerns, our research team has developed Smart Walk, a culturally relevant, Social Cognitive Theory-based smartphone-delivered intervention designed to increase PA and reduce cardiometabolic disease risk among AA women aged 24–49. The Smart Walk smartphone application includes 4 key features to promote PA: 1) Multi-media PA promotion modules delivered on a weekly basis in the form of 3–7-minute videos and electronic text with images, 2) discussion boards for participants to discuss the weekly PA modules and give/receive social support, 3) a PA self-monitoring/tracking tool, and 4) brief PA promotion messages delivered 3 times per week via push notifications. The purpose of this presentation is to describe the development process of the Smart Walk program.

Methods. Development has followed a 4-phase process. Phases 1–3 are complete. Phase 4 is ongoing with completion scheduled for March 2018. **Phase 1** used a series of focus groups (n=9) with 25 AA women (*M* age = 38.5 years, *M* BMI = 39.4 kg.m²) to identify essential theoretical and cultural factors associated with PA. In **Phase 2**, qualitative data collected during Phase 1 were analyzed using NVivo qualitative data analysis software and findings were used to enhance the theoretical fidelity and cultural relevance of the PA program. In particular, intervention materials were designed to target five Social Cognitive Theory constructs (i.e., self-efficacy, self-regulation, social support, behavioral capability, and outcome expectations) and were culturally tailored to address three cultural characteristics of African American women (i.e., collectivism/ethic of care, racial pride, and physical appearance norms). **Phase 3** focused on technical development of the PA promotion materials. For this phase, we partnered with a copy editor to ensure all text-based intervention materials were written at < 8th grade reading level and a local photographer/videographer to create professional photos and video vignettes for the PA program. For **Phase 4**, the research team is collaborating with software engineers to develop the Smartphone app used to deliver the Smart Walk program.

Results. The development process described is designed to maximize usability, cultural relevance, and impact of a smartphone-based PA program for AA women. The program is scheduled to be tested in an 8-month randomized controlled pilot trial beginning Fall of 2018.

Conclusions. The Smart Walk intervention has the potential of promoting PA and reducing cardiometabolic disease risk among AA women.

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DO DOG WALKERS ACCUMULATE MORE MODERATE PHYSICAL ACTIVITY MINUTES THAN NON-DOG WALKERS?

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There is growing interest in the health benefits of dog ownership, including the role of dogs in promoting regular physical activity (PA). Research suggests that dog walking can help owners meet PA guidelines, but few studies have used accelerometers to verify that self-reported dog walkers engage in more moderate PA than non-dog walkers. It is plausible that dog walking replaces other PA and/or that dog walking falls below moderate-intensity.

PURPOSE: To examine accelerometer-measured PA levels among dog owners that report regularly versus never walking their dog.

METHODS: Forty-two dog owners who reported exercising ≤ 3 d/week were enrolled in a stealth health intervention involving dog obedience training. Participants wore an Actigraph GT3X on their right hip and recorded all dog walking activity for 7d at baseline. We examined average min/d of moderate PA among regular dog walkers (≥ 4 d/wk) compared to non-dog walkers (0d/wk) and summarized self-reported dog walking behavior using descriptive statistics.

RESULTS: Twenty participants (80% female; mean age 35 ± 10 years) were included in analyses; seven reported walking their dog ≥ 4 d/wk and thirteen reported walking their dog 0d/wk. Dog walkers reported 20 ± 11 min/d of dog walking (range 10–43 min/d). Dog walkers averaged 31.4 ± 13.0 min/d of moderate PA compared to 16.2 ± 9.3 min/d among non-walkers ($p=0.007$).

CONCLUSION: This investigation is consistent with previous literature suggesting that owners that walk their dog accumulate more health-promoting PA than owners that do not walk their dog. More research is needed to verify the intensity of dog walking in general and across dog sizes and breeds. Novel interventions that promote dog walking among inactive dog owners may have significant public health benefit given that millions of American households own dogs.

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DOSE RESPONSE ASSOCIATION OF OBJECTIVE PHYSICAL ACTIVITY WITH MENTAL HEALTH IN A REPRESENTATIVE NATIONAL SAMPLE OF ADULTS

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Objectives: Although higher physical activity (PA) levels are associated with better mental health, previous findings about the shape of the dose–response relationship between PA and mental health are inconsistent. Furthermore, these associations may differ according to sedentary levels. We investigated the cross-sectional dose-response associations between objectively measured physical activity and mental health in a representative national sample of adults. We also examined whether sedentary time modified the PA - mental health association.

Methods: Physical activity and sedentary were measured using accelerometry in Canadians aged 20 to 69 years. Using data from Canadian Measures Health Survey (n=8150), generalized additive models with a smooth function (adjusted-for socio-demographic and health behavioral factors) were fitted to examine associations between moderate and vigorous PA (MVPA), light PA (LPA) (minutes/day), daily steps (combined or not with sedentary) and self-rated mental health.

Results: A curvilinear relationship between average daily minutes of MVPA ($p < 0.001$) and mental health was observed, with benefits until 50 min/day. For LPA, a more complex shape (monotonic and curvilinear) was found ($p = 0.003$). For daily steps, inverted U-shaped curve suggested increasing benefits until 5000 steps ($p < 0.0001$). The tested PA-sedentary combinations showed that increasing sedentary time buffered the positive PA-mental health associations.

Conclusion: Non-linear dose-response patterns between the PA characteristics and mental health were observed. Our empirical findings make a unique contribution in the literature by providing a new understanding of PA-sedentary interplay with mental health, using objective measures and population-level data. From a public mental health perspective, four messages can be drawn from this: every daily MVPA minutes until 50 minutes are positively associated with mental health; every daily steps are positively associated with mental health and more than 5000 are associated with benefits; when LPA is combined with MVPA, greater benefits for mental health might be achieved and the “move more and sit less” strategy might also apply to mental health.

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EFFICACY OF CLINIC-BASED TREADMILL WALKING IN CREATING BEHAVIORAL CHANGE IN OVERWEIGHT AND OBESE ADULTS WITH BIPOLAR I DISORDER

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Objective: To determine the efficacy of in-clinic treadmill walking as part of a weekly behavioral intervention program among overweight and obese adults with bipolar I disorder (BD).

Design: Randomized clinical trial; Reducing Medical Risk in Individuals with BD (MEDRISK) Study: baseline data collected 2009–2011.

Setting: Depression, Mania-Depression Prevention Program, University of Pittsburgh Medical Center, Pittsburgh, PA, USA

Participants: Overweight and obese ($BMI \geq 25 \text{ kg/m}^2$) adults (18–55 years) diagnosed with BD in remission (Hamilton Rating Scale 2510, Young Mania Rating Scale8, Clinical Global Impression-Bipolar

Methods: The IRRi behavioral intervention consisted of 15 weekly sessions (focusing on improving sleep/wake disturbances, social rhythms, nutrition and physical activity (PA) to reduce medical comorbidities and improve psychiatric and functional outcomes) delivered by a lifestyle coach trained as a health educator in a private office. Optional in-clinic treadmill walking protocol consisted of walking for 10 min for the first session with 5 min increases/session to a maximum of 45 min of treadmill walking/session. Daily PA (total and aerobic steps) was estimated using Omron pedometer at baseline, 4- and 6- month follow-up. Valid monitoring days defined as total steps/d > 500 and pedometer worn > 8 hrs/d. Paired t-tests used to detect step differences from baseline to follow-up.

Results: Optional clinic treadmill walking was offered to 37 of the 50 (74%) IRRi participants and 54% (n=20) expressed interest in treadmill walking. At baseline, participants averaged 5075 ± 2128 total steps/day. On average, participants walked on the treadmill for 29 ± 9 min, 1.4 ± 0.5 miles, 3 mph, 8 ± 6 (62%) of sessions. Treadmill walkers (n=16) increased PA by an average of 857 steps/day ($p=0.11$) and 5690 aerobic steps/wk ($p=0.04$) from baseline to 4-month follow-up (end of weekly in-clinic treadmill walking sessions). At 6-month follow up, neither in-clinic treadmill walkers ($p=0.62$) nor non-treadmill walkers (n=17, $p=0.83$) had a statistically significant change in daily steps compared to baseline.

Conclusion: Weekly in-clinic treadmill walking with a lifestyle coach facilitates PA in adults with BD. However, less frequent sessions (monthly or longer) with a lifestyle coach or programs of inadequate duration may not be sufficient to sustain behavioral change in this high-risk population.

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EXPLORING PHYSICIANS' INTENTION TO PROVIDE EXERCISE COUNSELING TO PATIENTS IN TAIWAN USING THE THEORY OF PLANNED BEHAVIOR

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Background: Overweight/obesity and chronic diseases could largely be attributed to lack of physical activity (PA). Lately, increasingly more clinical guidelines have recommended that physicians should provide patients with exercise counseling (EC) to help increase their PA, through which the patients could not only improve their lifestyle but also enhance their treatment effects. However, little is known about the current situation of physicians'; intention to provide EC for outpatients in Taiwan. Hence, this study aimed to examine physicians'; intention to provide EC and their associated factors using the Theory of Planned Behavior (TPB).

Methods: Using the TPB as a theoretical framework, a quantitative questionnaire was developed, including the single-item measures and multiple-item scales of TPB constructs—Attitude Toward the Behavior (ATB), Subjective Norm (SN), and Perceived Behavioral Control (PBC). A total of 27 individual TPB items were factor-analyzed to form 5 multiple-item scales (i.e., ATB about positive and negative outcomes, general SN, and PBC under facilitating and constraining conditions), which demonstrated satisfactory psychometric properties. Survey responses from 1,016 physicians were included in the multivariate logistic regression analyses to examine the TPB-based factors related to higher EC intention.

Results: Only 42.8% of the physicians were classified as having higher intention to provide EC. Regarding the single-item measures of the TPB constructs, physicians perceiving positive ATB (AOR=3.28), supportive SN (AOR=3.73), and high PBC (AOR=4.24) reported higher intention to provide EC. As for the multiple-item scales of the TPB constructs, perceiving neutral (AOR=2.14) and positive (AOR=4.40) ATB about positive outcomes was linked to higher intention to provide EC. When perceiving neutral (AOR=2.21) and supportive (AOR=3.62) general SN, physicians were more likely to have higher intention to provide EC. Physicians perceiving high PBC under facilitating conditions (AOR=1.54) were more likely to have higher intention to provide EC.

Conclusions: Less than half of the physicians in this study had higher intention to provide EC. The study also showed that the higher the level of these main TPB constructs, namely, ATB about positive outcomes, general SN, and PBC under facilitating conditions, the higher the intention of physicians to provide EC for outpatients. These findings can inform future research and clinical practice.

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FEASIBILITY AND EFFECT OF A PEER MODELING WORKPLACE PHYSICAL ACTIVITY INTERVENTION FOR WOMEN

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Purpose: Work, marriage, and children have a greater negative influence on healthy physical activity (PA) behavior in women compared to men. The purpose of this study was to evaluate the feasibility and effect of a 12-week workplace, peer modeling intervention on cardiorespiratory fitness and cardiovascular risk in working women.

Theoretical Framework: Social cognitive theory (self-efficacy) and social comparison theory support the peer modeling intervention. Skills and new patterns of behavior can be developed through observation of and self-comparison to, a model successful with a health behavior.

Methods: A randomized, two-group, pretest-posttest design was used. Inactive women 19 to 65 years of age were recruited from employees of a Midwestern health system. Participants were randomized to either the attention control group (ACG) (n = 26) or the intervention group (IG) (n = 26). Both groups met every other week for six lunch and learn presentations. The ACG received general health information. The IG participated in six group sessions with an active peer model, received an exercise prescription, and PA information. Pre and post measures were: PA (ActiGraph), Estimated VO_{2max} (cycle ergometer), resting heart rate (HR), fasting glucose and lipids, and lifetime cardiovascular risk. Data analysis was completed using hierarchical linear modeling.

Results: Thirty-nine women completed both pre and post testing (ACG n = 22; IG n = 17). No significant group by time interaction effects were found. Although both groups increased their PA levels over time (F [df = 1] = 11.4, p = .002), primary outcomes that favored the IG were estimated VO_{2max} (IG = 6.7%; ACG = 4.2%) and resting heart rate (IG = -5.3%; ACG = -1.0%). Secondary outcomes that favored the IG were lifetime cardiovascular risk (IG = -13.0%; ACG = -3.2%), total cholesterol (IG = -3.1%; ACG 1.3%), triglyceride (IG = 6.6%; ACG = 30.6%) and LDL (IG = -2.7%; ACG = 0.3%).

Conclusions: A workplace peer modeling intervention was feasible although there was greater drop-out in the IG compared to the ACG. Although PA increased in both groups, the IG had greater improvements in fitness (VO_{2max} , HR) and cardiovascular risk (total cholesterol, triglyceride, LDL, calculated risk score) compared to ACG. Results support repeating the intervention in a fully powered study.

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FEASIBILITY OF AN ACCEPTANCE-BASED INTERVENTION TO PROMOTE ADOLESCENT PHYSICAL ACTIVITY

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Background: Most adolescents do not meet the recommended 60 minutes of physical activity (PA) per day. Moreover, school-based interventions have shown little to no impact on increasing PA. Unlike most PA interventions, acceptance-based behavioral treatments (ABT) encourage individuals to adopt new behavior patterns by accepting internal experiences (emotions, urges, physiological sensations) rather than working to change them. To date, interventions to promote increased adolescent PA using ABT have not been tested. This study reports on the feasibility of such an intervention.

Methods: A pilot study was conducted with 9 middle-school students to examine the feasibility of delivering 12 weekly behavioral counseling sessions combined with activity monitoring. Interviews were conducted during sessions 6 and 10 to elicit adolescents' thoughts about wearing the Fitbit Flex activity monitor daily for 12 weeks and attending weekly behavioral counseling sessions during the PE period. Qualitative analysis of interview responses was conducted using ATLAS.ti 8.0 to code responses and identify themes.

Results: Three participants (2 control and 1 intervention) were dropped from the study due to noncompliance with assessments ($N = 1$) or injury ($N = 2$). At least 3 weekly sessions had to be rescheduled for 8 participants (range = 3 to 8), and all participants completed all 12 sessions. Perceptions of the Fitbit were overwhelmingly positive, with all participants reporting it was a helpful reminder to meet their activity goals and most participants commenting that it was natural or comfortable to wear. All students reported that they noticed at least one positive change, including having more energy ($N = 6$), trying harder in PE ($N = 5$) and being more focused ($N = 3$). Negative comments related to the Fitbit were primarily related to the need to charge the device every 5–7 days, and negative comments about study participation related primarily to the cardiorespiratory fitness test or missing specific preferred activities during the PE period. Four out of the nine participants were able to report using an acceptance-based skill when asked. Most of the participants perceived they were now being more active or involved during PE, and four out of the nine students reported that they were spending more time engaged in PA.

Conclusions: A 12-week-school based intervention incorporating activity monitoring with weekly behavioral counseling is feasible and was received overwhelmingly positively by middle-school students. As a whole, the students liked wearing the Fitbits and reported experiencing positive changes over the course of the intervention. Reported utilization of the acceptance-based skills was modest, suggesting that the guided monitoring of activity levels may have been the more influential component of the intervention.

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I THINK THEREFORE I AM? EXAMINING THE RELATIONSHIP BETWEEN EXERCISE IDENTITY AND EXERCISE IN BEHAVIORAL WEIGHT LOSS TREATMENT

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Exercise identity (EI), or the degree to which one identifies as an exerciser and incorporates exercise into his or her self-concept, has been hypothesized to promote continued engagement in exercise. However, research on EI is limited by frequent use of self-report measures of exercise, cross-sectional designs, and research in convenience and/or physically active samples (vs. key populations for increasing exercise, such as individuals with obesity). This study examined: (1) demographic and anthropomorphic predictors of EI at the beginning of behavioral weight loss (BWL) treatment, (2) the relationship between EI and engagement in objectively-measured moderate-to-vigorous activity (MVPA) at the start of treatment, (3) change in EI during the first 6 months of treatment, as the exercise prescription increased, and (4) the relationship between change in EI and MVPA at 6 months. Participants ($N=320$) were adults with overweight or obesity ($M_{BMI}=35.1 \text{ kg/m}^2$) who received 16 sessions of group-based BWL over 6 months. The exercise prescription increased from 0 to 250 minutes of MVPA per week during this time. EI was measured with the Exercise Identity Scale at 0 and 6 months; MVPA per week was measured by waist-worn accelerometers at both times points. BMI was negatively correlated with baseline EI ($b=-0.05$, $p=0.003$), and identifying as non-White (vs. White) predicted greater baseline EI ($b=-0.38$, $p=0.04$). Controlling for these variables, baseline EI was significantly and positively associated with baseline MVPA ($b=0.20$, $p<0.001$). EI increased substantially from 0 to 6 months ($p<0.001$; partial $\eta^2=0.15$), but change in EI from 0 to 6 months did not predict MVPA at 6 months ($b=-.002$, $p=.76$) when controlling for baseline MVPA, baseline EI, and relevant demographic variables. These findings support the relevance of EI to exercise behavior among BWL participants at the start of treatment, and demonstrate that EI increases during BWL treatment. However, the hypothesis that increases in EI would translate into greater MVPA was not supported. This may be due to differing motivations for exercise across participants; for example, EI may be less predictive of MVPA among individuals with a high level of external motivation for exercise. Future research should examine whether factors such as motivation moderate the relationship between EI and MVPA, as well as whether increases in EI during BWL confer benefit for exercise maintenance after program contact reduces or ends.

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INITIAL VALIDATION OF A NEW THREE PHASE HABIT MEASURE IN THE PHYSICAL ACTIVITY DOMAIN

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Background: The benefits of physical activity (PA) have been well-established, yet most of the population is inactive. A sound understanding of PA antecedents is likely to improve intervention success. Most PA research has focused on conscious, reflective determinants (e.g., attitudes, intentions), yet emerging research suggests that reflexive factors such as habit may also determine PA. Habit is an automatic behavioral response triggered by a stimulus. Due to the complexity and duration of PA behavior, habit may be most important during the initiation of PA and less relevant during its execution. However, the effect of habit in multiple phases on PA performance (preparation, initiation, execution) requires continued investigation. Additionally, habit research has relied primarily on results from the Self-Report Habit Index (SRHI), which has been criticized for under-representation of the stimulus-response aspects of habit formation and an over-reliance on behavioral frequency, which may or may not be reflective of habit. Alternative measures of PA habit would be useful. The purpose of this study was to examine the validity and reliability of a short-item measure of PA habit, and whether the three phases of habit contribute to explaining levels of PA.

Methods: Undergraduate students at the University of Victoria completed an online survey including the SRHI, the alternative habit measure (with item content covering automaticity, absence of will-power, cues, and thoughts other than PA), exercise intentions, and current exercise participation.

Results: We received 609 responses (29.6% male, mean age=21.51; SD=4.70). Reliability of the five-item short form habit measure was adequate for preparation (.72), initiation (.76), and execution (.77) phases of PA. The SRHI was significantly ($p < .01$) associated with the phases of preparation ($r = .73$), initiation ($r = .78$), and execution ($r = .53$) in the instrument. Correlations with PA were also significant ($p < .01$) for preparation ($r = .34$), initiation ($r = .51$), and execution ($r = .29$), yet only initiation habit was independently associated with PA in multiple regression analysis [$F(3, 459) = 54.64$; $p < .01$]. Finally, both initiation habit ($\beta = .37$; $p < .01$) and intention ($\beta = .31$; $p < .01$) were significant independent predictors of PA explaining 33% of its variance [$F(3, 460) = 53.81$; $p < .01$].

Conclusion: The three phases of habit had acceptable reliability and were associated with PA and the SRHI, which supports the validity of the new measure. This test also supports past research and theory that initiation habit may be the crucial phase for PA. Habit formation promotion may have utility in PA intervention independent of more standard intention promotion approaches.

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OSTEOPATHIC MEDICAL STUDENTS' KNOWLEDGE AND ATTITUDES TOWARD EXERCISE PARTICIPATION, RECOMMENDATIONS, AND COUNSELING

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Current guidelines recommend that primary care physicians provide physical activity (PA) counseling as part of routine preventative healthcare. However, specific education regarding PA recommendations is typically not included in medical school curriculum and it is unclear whether future physicians are prepared to offer effective counseling in this area.

PURPOSE: The purpose of this study was to describe first year medical students' personal knowledge and attitudes toward the importance of PA for themselves and their future patients.

METHODS: An electronic anonymous survey was distributed to all first-year osteopathic medical students enrolled at an osteopathic medical school in the Midwestern US. The survey, designed specifically for this study, assessed health-related knowledge, beliefs, and behaviors.

RESULTS: A total of 144 students (mean age 24.1 ± 2.0 y; 52.8% female, 71.3% white) completed the survey. Most students (91.0%) indicated that living a healthy lifestyle was "extremely important" or "very important" to them, while 86.9% prioritized PA at least "moderately". Over half exercised for at least 30 minutes on at least 3 of the last 7 days, but only 29.5% reported doing so on at least 5 days. Nearly all of the students (95.5%) indicated that exercise is "extremely important" or "very important" for their future patients, 72.9% indicated feeling at least "moderately comfortable" counseling patients, and 84.3% desire to include counseling in their practice. However, only 59.7% indicated that they are aware of current PA recommendations for American adults.

CONCLUSIONS: Although participants prioritized exercise for themselves and their future patients and indicated a desire to include exercise counseling as part of routine clinical care, the majority were unaware of the current PA recommendations for American adults. Thus, there is a need to specifically address PA recommendations as part of the medical school curriculum.

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A231

6:30 PM-7:30 PM

PERSONALITY PROFILES, EXERCISE TRIAL ATTRITION AND ADHERENCE: DO THE BIG FIVE MATTER?

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The relationship between personality and exercise self-regulation is unclear. There is reason to believe that profiles of personality traits may exist (unobserved, empirically derived subgroups, i.e. “latent classes”) that lend themselves to more favorable outcomes regarding exercise behavior. To date, research has mostly focused on conscientiousness (*C*) and neuroticism (*N*), as these traits are associated with occupational success and life satisfaction. The purpose of this study was to test whether inter-individual differences in the Big Five (BF) personality traits were associated with exercise behavior in the context of a randomized controlled trial involving a multicomponent cognitive training (CT) program (vs. an attention-control involving health education video-viewing) designed to increase exercise self-regulation. Participants completed the BF Inventory at baseline ($n=133$), one-month (post-CT; 6% missing), and 5-month follow-up (21% missing). Data were analyzed using general mixture modeling with a robust maximum likelihood estimation to handle missing data. A 3-class solution was selected based on the lowest Bayesian Information Criteria ($BIC=3521.53$) and bootstrap likelihood ratio test= 29.24 , $p<.01$; entropy=.74). There were no significant group differences in BF trait levels at baseline. With the exception of attrition during CT, baseline profiles of BF traits were not associated with the trial’s primary outcomes (adherence, dropout). To explore personality change as a function of CT, we modeled all five BFI difference scores that revealed two distinct classes but no statistically significant differences across primary outcomes. Finally, we examined group effects on *C* and *N* scores, in isolation, via growth mixture modeling. A 3-class solution was selected based on theory and model fit indices for both *C* and *N* and each trait’s trajectory reflected temporally-stable means (high/moderate/low). There were also no significant associations between empirically-estimated latent class assignment and any behavioral outcome data within the *N* model. Interestingly, the CT group were 3.3x more likely to be empirically-assigned to the low *N* class. Similar to *N*, there was no change in *C* from baseline. However, results revealed that those who were consistently high in *C* attended more exercise classes than those who were moderate in *C* ($p<.05$). In the *C* model, the CT group was also 1.4x and 1.7x more likely than the control group to be assigned to the high or low-moderate *C* classes, respectively. In the context of a novel multicomponent CT program, these results provide limited evidence supporting the role of conscientious in exercise adherence.

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MERITORIOUS AWARD WINNER

A232

6:30 PM-7:30 PM

PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOR PREDICT INTRAINDIVIDUAL AFFECTIVE VARIABILITY AMONG OVERWEIGHT AND OBESE ADULTS

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Adults who are overweight/obese engage in less physical activity (PA) and more sedentary behavior (SB) than normal-weight peers. Affective consequences of PA/SB contribute to future decisions about activity, and affective variability is related to physical and psychological outcomes. However, little work has been done to evaluate within-person variability in negative affect resulting from PA/SB. Participants ($n=140$) completed one week of assessment at month six (when the PA prescription had reached the maximum) of a year-long behavioral weight loss (BWL) treatment. Individuals were asked, each day, to complete six semi-randomly timed prompts assessing mood states and to wear a waist-worn accelerometer for all waking hours. Affective variables assessed were: loneliness, anger, boredom, sadness, and stress. Intraday affective variability was calculated for each participant using mean squared successive difference (MSSD). Analyses examined whether: 1) a bout of PA predicted next-day MSSD; 2) a bout of morning PA predicted same-day MSSD; 3) a bout of early morning SB predicted same-day MSSD. PA bout occurrence predicted lower next-day variability in loneliness (estimate = -0.09 , $t = -2.17$, $p = .03$), anger (estimate = -0.21 , $t = -2.13$, $p = .03$), and stress (trend-level; estimate = -0.15 , $t = -1.95$, $p = .05$); no relationships were observed between PA and next-day variability in boredom, sadness, or stress. No relationships were observed between morning PA and same-day affective variability. A bout of morning SB predicted higher same-day variability in boredom (estimate = 0.08 , $t = 1.97$, $p = .049$) and stress (estimate = 0.15 , $t = 2.25$, $p = .02$); no relationships were observed between morning SB and variability in loneliness, anger, or sadness. Results indicate that PA and SB predict subsequent variability in affect among adults engaging in BWL. Notably, although engaging in a bout of PA reduced affective variability (specifically for loneliness, anger, and stress) on the next day, no effects were observed on the same day, indicating that there may be a delayed impact of PA on regulating negative affect. Delayed benefits are less likely to reinforce behavioral engagement than more immediately salient benefits. Engaging in SB early in the morning is associated with variability in boredom and stress on that day. Future research should examine whether PA/SB are also predicted by affective variability, as it is likely that these relationships are bidirectional.

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RESIDENTIAL SEGREGATION AND DISPARITIES IN EXERCISE AMONG A NATIONAL SAMPLE OF LATINOS AND WHITES

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Latinos exhibit significantly lower levels of exercise than Whites. Many have theorized that this is because Latino neighborhoods are 8.6 times more likely than White ones to lack recreational facilities; 82% of Latino (vs. 38% of White) neighborhoods have none. This suggests that Latino residential segregation may contribute to or account for ethnic disparities in exercise. We explored these possibilities for the first time by analyzing data on the 82,487 White and 8,785 Latino adults in the 2000 Behavioral Risk Factor Surveillance System (BRFSS), a random, nationwide telephone health survey. BRFSS data on exercise (Any exercise in the past month? Yes/No) were linked to 2000 census data on the Segregation (Hispanic Dissimilarity Index) and Poverty (% Below) levels of all metropolitan statistical areas (MSAs) in the BRFSS. If segregation accounts for (fully explains) disparities in exercise, then Latinos in high-segregated areas will exercise less often than Whites whereas those in low-segregated/integrated areas will not differ from Whites. If segregation contributes to disparities, then Latinos in both high and low segregated areas will exercise less often than Whites, with disparities greater for high-segregated Latinos vs. Whites. Multi-level modeling revealed that Whites were 1.6 times more likely than Latinos to have exercised in the past month. After controlling for age, education, gender, and MSA-Poverty, Latinos residing in high and in low segregated MSAs were 41.6% and 31.9% (respectively) less likely than Whites to exercise. These findings suggest that Latino segregation contributes to but does not account for exercise disparities. The study is limited by measuring segregation and poverty at the MSA level. Census tract (CT) level measures of neighborhood influences are more sensitive and predictive than MSA-level measures, and CTs (not MSAs) constitute neighborhoods. Hence, the segregation effect found here is surprising given the MSA level of analysis and no doubt underestimates segregation's role. Research at the CT-level is needed to clarify the role of segregation in Latino disparities in exercise and highlight the possible need to expand the reach of behavioral interventions to segregated areas to reduce Latino disparities in exercise.

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RESULTS OF A 12-WEEK FITBIT INTERVENTION ON CHANGES IN DAILY STEP COUNTS IN LOW-INCOME MOTHERS

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Background: While 50% of U.S. mothers with young children do not engage in regular physical activity (PA), rates are disproportionately lower for mothers living at or below the federal poverty level. Wearable PA monitors such as Fitbit have the potential to influence PA, yet the efficacy of a Fitbit-only intervention to increase PA in low-income mothers is unknown. This pilot study examined the temporal impact of using a Fitbit to increase daily steps over 12-weeks.

Methods: Participants (N=13) were insufficiently active, low-income mothers receiving assistance from the Delaware Women, Infants, and Children (WIC) program. Baseline measures included demographics, body mass index (BMI), PA self-efficacy, and average 7-day step counts, measured with ActiGraph GT3X accelerometers. Participants received a Fitbit Charge device to wear during all waking hours over 12-weeks. Daily Fitbit step counts were obtained through a third-party server (Fitabase). At posttest, participants completed the same measures administered at baseline, plus a Fitbit Satisfaction questionnaire. Paired t-tests were used to examine changes in mean weekly step counts, BMI, and PA self-efficacy (baseline and 12-weeks). Trajectories of daily Fitbit step counts were tested using linear mixed models with fixed and random effects for time.

Results: Compared to baseline, no statistically significant changes were found at 12-weeks for mean weekly step counts (8,710.17 ± 10,650.58 and 8,305.33 ± 8204.05), BMI (31.24 ± 5.31 and 31.40 ± 5.10), or PA self-efficacy (2.75 ± 0.94 and 2.95 ± 0.71), all $p > 0.05$. There was a significant, positive effect of time for increasing average daily Fitbit step counts during week 1 only, controlling for baseline steps ($\beta = 770.87 \pm 355.94$, $p = 0.034$). Baseline PA self-efficacy and posttest Fitbit satisfaction scores were independently associated with a significant increase in daily Fitbit step counts over the 12 weeks ($\beta = 1,254.24 \pm 295.80$; $p = 0.00$) and ($\beta = 2,795.12 \pm 683.41$; $p = 0.00$), respectively.

Conclusions: Impact of a stand-alone Fitbit intervention to increase daily step counts in low-income mothers was limited to week 1 only, suggesting an initial novelty effect that is not sustained over time. However, higher baseline PA self-efficacy and greater Fitbit satisfaction scores were associated with an increase in average daily steps taken over 12 weeks. Study findings highlight the need for personally tailored PA interventions in this at-risk population.

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SOCIAL COGNITIVE DIFFERENCES BETWEEN ADULT EXERCISERS EFFICACIOUS TO MANAGE EXERCISE AND CONCURRENT LEISURE GOALS

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Adults often set multiple concurrent goals, including exercise, which they plan to pursue in their leisure time. Unfortunately, most adults do not pursue exercise often enough to obtain health benefits. Prior research has shown that self-regulatory efficacy to concurrently manage multiple goals is associated with more frequent exercise. Social cognitive theory (SCT) contends more frequent exercisers hold stronger perceptions that positive exercise outcomes are highly valued and likely to occur. Although SCT contends that managing exercise with other goals may be easier the more mutually facilitative the goals are, no research has examined whether adults with varying levels of efficacy differ in their levels of intergoal facilitation. The study purpose was to examine whether adults ($N = 119$; $M_{age} = 30 \pm 12$ years) who reported pursuing one exercise and one non-exercise goal and who had varying levels of efficacy beliefs differed in intergoal facilitation, outcome expectations, and exercise. An online survey assessed goals, efficacy, facilitation, outcome expectations (likelihood and value) and past month exercise. Higher ($n = 36$), moderate ($n = 44$), and lower ($n = 39$) efficacy groups were identified and then compared using MANOVA. Facilitation, outcome expectations, and exercise were the dependent variables. The overall MANOVA was significant, ($p < .01$, $\eta^2_{partial} = .10$). Follow-up ANOVAs revealed that the higher efficacy group reported significantly higher intergoal facilitation and outcome likelihood (p 's $< .05$; $\eta^2_{partial} = .10$ and $.07$) than the moderate and lower efficacy groups. Outcome value and exercise did not significantly differ between groups. Across all groups, value exhibited a near ceiling effect and all groups were highly active, with means ranging from 296 to 358 minutes/week of exercise. Findings contribute novel information that higher efficacy is a key differentiating social cognition associated with higher intergoal facilitation and outcome likelihood. Future research should examine whether more efficacious individuals set concurrent goals that are more facilitative, than conflicting, in nature. Future research should also recruit a diverse sample of participants with varying exercise levels (e.g., initiates, insufficient, and sufficient exercisers). Such research will provide valuable information that should help adults better manage and pursue health promoting exercise, while also pursuing non-exercise goals in their leisure time.

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TARGETING AUTONOMY, COMPETENCE, AND RELATEDNESS IN A WEIGHT LOSS PROGRAM FOR KNEE REPLACEMENT PATIENTS

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The majority of knee replacement patients are overweight/obese before surgery. Despite functional improvements after surgery, most patients gain additional weight. Based on patient and stakeholder input, we developed the 14 session Patient-Centered Weight Loss Program (PACE). Guided by the Self-Determination Theory (SDT), PACE aimed to promote patients'; autonomy, competence, and relatedness by eliciting patients'; perspectives, providing options and encouragement, and supporting choices. Sixteen patients were randomized to start ≤ 6 weeks before surgery (PACE) or 12 weeks post-op (Delayed PACE). We hypothesized that increases in autonomy (assessed via the Health Care Climate Questionnaire) and competence (Perceived Competence Scale) as well as higher levels of relatedness (Intrinsic Motivation Inventory [IMI] relatedness subscale) would be associated with increased intrinsic motivation (IMI) and program engagement (# of calls completed). Autonomy and competence were assessed at baseline (pre-op), 12, and 26 weeks after surgery; relatedness was assessed at 12 weeks for PACE and 26 weeks for Delayed PACE. Repeated measures ANOVAs were used to examine changes in SDT constructs over time and group, and Pearson correlations were used to explore relationships between SDT constructs and program enjoyment. Sixteen participants (mean \pm SD 63.3 \pm 7.5 yrs, 69% female, 69% White, BMI 36.3 \pm 5.1 kg/m²) were randomized. Retention was 69% and 63% at 12 and 26 weeks respectively, with no differences between groups. Delayed PACE (-10.5 \pm 4.1%) lost significantly more weight than PACE (-4.3 \pm 1.5%, $p < 0.05$) at 26 weeks. Participants completed 9.6 \pm 2.2 coaching sessions. Perceived competence increased from 4.1 \pm 0.9 at baseline to 5.5 \pm 5.5 at 26 weeks ($F(2,20) = 8.03$, $p < 0.003$, $\eta^2 = 0.445$); but no differences emerged between groups. Similarly, no changes across time or differences between groups were seen with autonomy or relatedness. Motivation was similar across groups (5.6 \pm 1.4) and neither motivation nor program enjoyment were related to SDT constructs. Despite attempts to target SDT constructs, PACE only increased perceived competence. Although the small sample size may be contributing to the lack of hypothesized effects in this study, the results suggest other mechanisms are likely contributing to the significant weight losses observed. Future studies are needed to better understand the mechanisms underlying the short- and long-term weight changes among knee replacement patients.

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THE SELF-EFFICACY REBOUND DURING AN INTERVENTION TO PROMOTE MODERATE EXERCISE IN ADOLESCENTS

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Health education in schools remains a powerful means of improving the health of adolescents. Physical activity promotion before and after school have demonstrated promising effects. These interventions are theory based but few actually assess changes in theoretical constructs during the intervention. Self-efficacy has consistently been associated with adolescent exercise. But studies have revealed that self-efficacy is relatively resistant to change. Effective strategies to build self-efficacy among adolescents are needed. The purpose of the study was to test the ability of a Social Cognitive Theory (SCT) based intervention to impact self-efficacy and moderate exercise during and after the intervention in rural adolescents. A quasi-experimental design was used to compare the treatment and comparison group. Three rural high schools in Ohio agreed to have their health classes participate in the study N=200 subjects in the intervention group and N=95 subjects in the comparison group. Students in each group were exposed to similar health education curricula, however the experimental group students received an additional 10 lesson intervention focused on behavioral skill building exercises. Measurements were collected at pre-test, 5 weeks and 2 weeks post intervention. Previously validated measures were used for exercise, and self-efficacy. At posttest the intervention group reported an increase from 1 to 3 days per week of moderate-intensity exercise ($p = .001$). There was a significant treatment interaction with self-efficacy ($p = .001$). The intervention group reported statistically significant decreases in self-efficacy at midpoint in intervention. However, by the end of the intervention there was a significant increase relative to baseline levels. This data demonstrates that self-efficacy for exercise may drop while engaging in SCT based behavioral skill building interventions, but can recover as students become more proficient with the behavior changes necessary for successful of exercise adherence. This study is one of just a few projects demonstrating how self-efficacy changes during a SCT based intervention. This study reinforces that self-efficacy can be one SCT variable that is amenable to change by a SCT intervention and this can result in a positive effect on leisure time physical exercise behavior. Short term behaviorally based health education programs could produce transient declines in self-efficacy.

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USING NEIGHBORHOOD HEALTH PROMOTION ACTIVITIES TO ASSESS BEHAVIORS, PERCEPTIONS, AND INTENT RELATED TO PHYSICAL ACTIVITY

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Introduction: Neighborhood health promotion activities can provide interactive environments in which to connect and communicate with community members about health-related behaviors while also serving as a resource for data collection and neighborhood program recruitment. Through *Movin'*; for LIFE (Lasting Improvements for Fitness and Energy), a program that works to develop a model of healthy living for residents of an urban, under-resourced, predominately black community, a family health promotion festival was implemented and data were collected regarding behaviors, perceptions, and intent related to physical activity (PA).

Methods: The Family Fun Fest (FFF), a one-day weekend event, included 5 activity stations that focused on PA and provided information about opportunities to engage in PA, such as neighborhood walking clubs. Trained staff conducted intercept interviews with attendees. Questions included demographic characteristics, current PA behaviors, perceptions about neighborhood conduciveness to PA, and interest to engage in more PA. Participants were also asked about their interest in joining neighborhood walking clubs.

Results: A total of 156 individuals attended the FFF, 63 were eligible for intercept interviews, and 58 completed them. Interview participants were primarily black (96.6%) and female (79.3%). The average age was 49 (SD=17.2). Most (70.7%) reported engagement in regular PA with walking indicated as the most popular activity (85.4%) among the physically active. The majority (91.4%) of participants were interested in walking more to increase their PA, and 60.3% signed up to join a neighborhood walking club. Of those who reported no regular PA (n=17), 64.7% signed up for the walking clubs. A significant relationship was found between self-reported regular PA and neighborhood perceptions. Those who agreed that their neighborhood encouraged PA were 4.32 times more likely to report regular PA than those who did not agree (95%CI: 1.32–15.11).

Conclusions: Neighborhood health promotion activities can be a useful tool for collecting information on current behaviors and recruiting potential participants in neighborhood-based programs, such as walking clubs. They may also motivate community members to change behavior as over half of those who reported no regular PA registered to join a walking club. Future research should examine whether intent to participate translates to actual participation.

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AWARENESS OF CHRONIC DISEASE RISK IS LOW AMONG BURMESE REFUGEES

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Background. Approximately a quarter of the over 60,000 refugees who resettle in the U.S. each year are from Burma. As has been the case for many other immigrant groups, as the Burmese acculturate, it is expected that they will experience declines in health, including increased incidence of chronic disease. In order to target health messaging to Burmese communities, a baseline understanding of their awareness of, and perceptions of risk for common illnesses is needed.

Purpose. The purpose of our study was to explore perceptions held by refugees from Burma about risk for common diseases (diabetes, heart disease, cancer).

Method. We conducted semi-structured interviews with 28 refugees from Burma (ages 23–72, 79% female; no education – college) who had resettled in a mid-sized Northeastern U.S. city (1–10 years in the U.S.). Interview topics included perceptions of risk for heart disease, diabetes, and cancer, and attributions for these perceptions. Open-ended questions were coded by teams of at least two coders who resolved discrepancies via discussion.

Results. Most participants were either uncertain about or thought they were not at risk for heart disease (85%), diabetes (87%), and cancer (91%). Lack of awareness about heart disease and cancer was common. Many had not discussed the diseases with a health care provider. The few participants who did rate their risk often attributed their level of risk to factors also noted in studies of risk perceptions in U.S. born samples (eating high sugar and fat foods vs a diet rich in vegetables; inadequate physical activity; genetics/family history; smoking; physical signs and symptoms). They also made attributions less commonly reported (e.g., belief in fate or that thinking about a disease might increase the likelihood of getting it; belief that stress, negative emotions, and trauma cause heart disease).

Discussion. Given low disease awareness, it seems many refugees from Burma have yet to be reached by mainstream chronic disease risk messaging. Also, in most cases, health care providers were not communicating these messages or were not doing so in a way that was understood by the participants. A few recognized that adopting an American diet and sedentary lifestyle might be unhealthy, but this was relatively uncommon. Community-based messaging efforts to promote healthy aspects of Burmese and American cultures might be an innovative path forward for these communities.

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DIAGNOSING AUTISM: WHAT LATINO PARENTS AND CAREGIVERS KNOW AND BELIEVE

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Background: Of the 1 in 68 children diagnosed with autism spectrum disorders (ASD) in the United States (CDC, 2014), the prevalence varies significantly across racial and ethnic groups. Documented disparities exist regarding autism diagnosis for Latino children. When compared to White children, previous research has shown that Latino children are diagnosed at a later age (Mandell, Listerud, Levy, & Pinto-Martin, 2002), are less likely to be diagnosed even when meeting autism criteria (Mandell et al., 2009), and more likely to be misdiagnosed (Mandell, Ittenbach, Levy, & Pinto-Martin, 2007). Given these issues surrounding accurately diagnosing Latino children with ASD, it is necessary to explore what Latino parents, caregivers, and community members understand about ASD diagnosis.

Purpose: The purpose of this study is to investigate what 18 Latino families know and believe about diagnosing autism, and the factors that inform their health beliefs.

Methods: Narrative interviews with 18 Latino families (8 families with a typically developing child aged 6–12 and 10 families with a child with ASD aged 6–12) were conducted to identify the factors that impact their in-home oral care routines, including how the presence of ASD may alter their habits. Family units consisted of at minimum, the primary caregiver, and included other family members who provided care for the enrolled child. Each family was interviewed twice in their native language (Spanish or English) for approximately 1–2.5 hours each session. As a secondary line of questioning, families were probed to discuss their perceptions of ASD. Interviews were transcribed verbatim and thematically analyzed by 3 coders.

Results: Five themes pertaining to where parents obtained their knowledge and details about their beliefs about ASD diagnosis were identified. The first, *Misconceptions*, explained the various fallacies perpetuated about ASD. The second theme, *Parents as students and teachers*, described how parents had to learn about their child's diagnosis to then be able to educate others. Next, *Role of Family* was related to the influence of family members on sharing information and opinions. Following, *Outside influence* clarified the information provided by non-family members, including health care providers, community members, or social network connections. The last theme, *Cultural Stigma*, focused on information that originated from the family's cultural background, situating the ASD diagnosis within Latino culture.

Conclusions: Researching how Latino parents, caregivers, and community members perceive Autism diagnosis will help illuminate how health information is communicated within this at-risk population, and inform the development of future targeted education and intervention programs.

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DO ANXIETY SYMPTOMS MEDIATE THE RELATIONSHIP BETWEEN FAMILISM AND HEALTH OUTCOMES AMONG LOW INCOME HISPANIC AMERICANS?

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Low socioeconomic status (SES) is a well-established risk factor for poor health outcomes and is associated with engagement in fewer health behaviors relative to higher SES. Hispanic Americans are more likely to be of low SES relative to Whites; however, while there are noted disparities in some health outcomes, Hispanic Americans have better mortality outcomes than other minorities. This apparent contradiction has been termed the Hispanic Paradox. The Reserve Capacity Model proposes that cultural resources buffer the detrimental effects of poverty on health. In particular, elements of the reserve capacity lead to reduced psychological distress, which results in better health behaviors and outcomes. Familism, or the primacy of the family unit, is one such value seen in many Hispanic cultures that may protect against the negative effects of poverty on health. Thus, the current study tested whether anxiety symptoms mediate relationships between familism and mental health-related quality of life (MHR-QoL), physical health-related quality of life (PHR-QoL), and engagement in health behaviors.

Participants of Hispanic descent were recruited from a holiday assistance program at a Salvation Army in the Midwest ($N = 133$); all participants had annual incomes below federal poverty guidelines. The sample was largely female (89.3%) and uninsured (77.5); mean age was 36.4 years ($SD = 9.2$). Participants were asked to complete the survey in English or Spanish, and most completed it in Spanish (79%). In addition to familism, the survey measured anxiety symptoms and three health outcomes (MHR-QoL, PHR-QoL, and engagement in health behaviors).

Mediation analyses were conducted using the Hayes'; PROCESS Macro. Results showed that anxiety did not significantly mediate relationships between familism and MHR-QoL, PHR-QoL, and engagement in health behaviors. However, there was a significant direct effect from familism to anxiety symptoms $b = -0.16$, $t(102) = -2.15$, $p = .03$. This result lends partial support to the hypothesis that cultural reserves are related to psychological processes. Other significant direct effects included anxiety predicting MHR-QoL and PHR-QoL, $b = -0.61$ $t(98) = -7.64$, $p < .001$ and $b = -0.35$, $t(95) = -2.33$, $p = .02$, respectively. Taken together, these results, while not fully supporting the hypothesized associations, do suggest that cultural values may affect intermediate psychological mechanisms that, in turn, affect health behaviors and outcomes.

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ETHNIC IDENTITY MODERATES THE RELATIONSHIP BETWEEN STRESS AND CO-OCCURRING ADVERSITIES AMONG BLACK WOMEN

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Background: The co-occurrence of three epidemics (Substance Abuse, Violence, and AIDS/HIV, i.e., SAVA) has been termed a syndemic (Singer, 1996). Syndemic theory explains how social determinants of health (such as minority stress) drive health disparities in certain communities, including among racial/ethnic minorities, individuals living in poverty, and people in urban settings. While increased stress has been associated with experiencing more SAVA epidemics, less is known about how protective factors might mitigate this risk. The current study examined whether ethnic identity serves a protective role in the relationship between stress and SAVA in Black women.

Method: Participants included 129 Black women ($M_{age}=34.8$, $SD=8.6$) in the U.S. Mid-South. Most women (79%) had a yearly income \leq \$20,000 and 61% had completed high school or less. Women were recruited from community organizations and completed hour-long interviews about life stressors (*Life Events Checklist*), perceived socio-economic status (SES), and ethnic identity (*Multigroup Ethnic Identity Measure-Revised*). SAVA was assessed based on report of illicit substance use in the past 6 months (*WHO Alcohol, Smoking, and Substance Involvement Screening Test*), physical/sexual violence with a partner in the past 6 months (*Revised Conflict Tactics Scale*), and ever testing positive for HIV. Endorsement of each SAVA was summed for a total score ranging from 0–3. SPSS PROCESS was used to examine the relationship between life stress and SAVA (accounting for age and SES) as moderated by ethnic identity.

Results: Controlling for age and SES, the moderation model was significant, $F(5, 123) = 6.74$, $p < .001$, $R^2 = .17$. Moderation was supported as the interaction between life stress and ethnic identity was associated with SAVA adversities ($\beta = .01$; $p < .05$). Specifically, the conditional effect of life stress on SAVA at differing levels of ethnic identity was significant at high levels of ethnic identity ($\beta = .06$; $p < .001$), but not at low or average levels of ethnic identity.

Conclusions: Findings confirm the positive association between life stress and SAVA; however, our results advance this knowledge by showing that Black women with high levels of ethnic identity appear to be protected from this cumulative risk trajectory. Thus, interventions for Black women experiencing SAVA should explore strategies for increasing ethnic identity exploration and commitment to enhance wellbeing.

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6:30 PM-7:30 PM

PRELIMINARY EVALUATION OF ATLANTA YOUTH PARTNERSHIP: ENGAGING AFRICAN-AMERICAN ADOLESCENTS IN CBPR HEALTH OUTCOMES RESEARCH

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Background: African-American (AA) adolescents experience multiple health disparities impacting numerous health outcomes (e.g., HIV, unintended pregnancy, obesity, asthma). Yet, in health outcomes research, adolescents are typically only study participants, potentially limiting the design, implementation, participation in and uptake of research findings in real-world settings. To fill this gap, the Atlanta Youth Partnership (AYP) engages AA youth as key stakeholders in health outcomes community-based participatory research (CBPR) to improve its reach and translatability.

Methods: In the 18-month AYP initiative, our team utilizes a youth development framework to provide developmentally tailored training and support to the AYP Youth Board. This approach engages adolescents in CBPR by acknowledging the unique structural support necessary for them to meaningfully engage and sustain their involvement in youth-driven research. Weekly 2 hour trainings equip youth with basic health research skills and foster leadership capabilities, as per the youth development CBPR process. An Adult Advisory Board comprised of local youth-serving professionals serves in a supportive capacity for the Youth Board. We collected data on youth meeting attendance and participation to assess engagement. At 6 months, we surveyed the youth to ascertain perception of voice in decision-making, presence of supportive adult relationships, and confidence in leadership and teamwork ability.

Results: Through an application process we recruited 12 AA high school students and 6 adult professionals in Atlanta to serve on the AYP Youth and Adult Advisory Boards. From Feb-Aug 2017, we held 18 Youth Board training sessions and 4 joint Youth/Adult meetings. The average youth attendance rate was 87.96% ($SD=7.68\%$), all youth facilitated at least one activity during joint meetings, 83.3% reported AYP increased their confidence talking in groups, 75% reported increased confidence working with adults, and 67% felt more confident working with a team. Youth strongly endorsed having a voice in decision-making ($M=4.73$, $SD=.46$) and the presence of supportive adult relationships ($M=4.78$, $SD=.20$; range:1–5).

Conclusions: Preliminary evaluation of AYP indicate high levels of sustained engagement and participation by youth. Thus far, our youth-development approach to CBPR has successfully provided youth with supportive adult relationships while allowing youth decision-making authority in the research process.

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QUALITATIVE EXPLORATION OF FAMILY INFLUENCES ON PHYSICAL ACTIVITY AND NUTRITION BEHAVIORS IN LATINO HOUSEHOLDS

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Background: Despite widespread recognition of the need to address physical activity (PA) and nutrition behaviors among U.S. Latinos, current knowledge regarding effective approaches remains limited. Latino culture places great emphasis on the family, yet research is needed to better understand how to build support within the family for healthy changes. This study qualitatively explored family influences on PA and nutrition behaviors in dyads of adult Latino family members to inform the adaptation of a family-focused community health worker-delivered intervention to promote healthy eating and PA in Latino households in Houston, TX.

Methods: In-depth interviews and brief surveys were conducted with 20 adult Latino family dyads (n=40 individuals) who resided in the same household to assess current PA and nutrition behaviors, family influences, and social support within the family for healthy behaviors. Interviews were audio-recorded, transcribed, and translated, as needed. Qualitative analysis involving inductive and deductive coding with NVivo 11 is ongoing.

Results: Participants were predominantly women (67%) and from Mexico (57%) with a mean age of 39 years (range 18–65). The most common relationship was husband-wife (44%) followed by mother-daughter (28%). Participants reported low levels of education (e.g., 44% ≤ 8 years) and acculturation (89% low acculturation), and nearly half (47%) reported low food security. Approximately 43% reported meeting PA recommendations, and 6% reported consuming ≥5 FV daily. Family influences on nutrition and PA behaviors centered on family health concerns that motivated positive lifestyle changes, household decision making that determined the types of food/drink purchased and prepared, and household knowledge and norms related to PA and nutrition behaviors. For example, some participants described how food preferences of the breadwinner dictated family meal choices, and how the sedentary lifestyle of household members limited motivation for PA. Participants also emphasized the positive effects of family members' modeling of healthy behaviors and the sharing of knowledge related to PA and nutrition.

Conclusions: Preliminary results yield insight regarding how family members may influence PA and nutrition behaviors in the home, intentional or not. Findings point to the need for interventions to engage multiple family members to promote increased awareness, motivation, and support for healthy lifestyles within the home.

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LONGITUDINAL TRAJECTORIES OF SUBJECTIVE STRESS AMONG DEMENTIA CAREGIVERS

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Subjective stressors are critical to the caregiver stress process, yet little work has examined resources that contribute to longitudinal changes in subjective stressors. The present study examines a variety of factors that contribute to changes in subjective stressors across time. Dementia caregivers (N=153) completed an in-person interview and 8 daily telephone interviews at baseline, and follow up interviews at 6 and 12-months. Growth curve analyses examine how care- and non-care stressors, respite, dyadic relationship quality, family support/conflict and care transitions (e.g., nursing home placement) are associated with changes in role overload and role captivity across 12 months. Caregivers who transitioned out of their role had higher overload and captivity at baseline. Among caregivers who transitioned out of caregiving, higher captivity at baseline was associated with declines in captivity and overload; more non-care stressors at baseline was linked to increased captivity and greater overload across time. Adult day service use and family support were associated with lesser captivity over time; taking more breaks from caregiving was linked to lower overload. Higher dyadic relationship quality was associated with lower captivity and overload. Findings contribute to caregiver intervention efforts by highlighting important resources associated with subjective stressors across time.

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ENGAGING FAMILY CAREGIVERS INTO HEALTHCARE DELIVERY: BARRIERS, FACILITATORS, AND BEST PRACTICES

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Families can directly and indirectly affect adult patient health and reduce costs to health care systems, yet there is no consensus on the best practices for integrating caregivers into the healthcare experience. Research on how clinical practitioners can effectively integrate family into patient disease management, rehabilitation, or symptom control has lagged far behind the research on developing patient-centered care. To address this issue, we present barriers and facilitators to engaging families and caregivers into healthcare delivery. We draw on data from two qualitative studies in order to explicate challenges of two different clinical populations; caregivers of persons with Alzheimer's disease, and caregivers of persons with heart failure. Drawing on the experiences of these two different caregiver groups, we explore the major barriers to being fully integrated into the healthcare of the care-recipient (e.g., legal/privacy concerns; maintaining patient autonomy and dignity; lack of training in managing complex family dynamics) and potential "best practices" (e.g., establishing trust with caregivers; identification of caregivers in the medical record; routine assessment of caregiver health; clarification of roles on healthcare team). We also present potential methods for measuring best practices, including new survey assessments of caregiver engagement in healthcare practices. Finally, we present opportunities and challenges for studying the role of caregivers in the healthcare setting (e.g., charting, role definition, and better partnerships with social services). This work is foundational to developing future evidence-based, feasible strategies for caregivers to improve patient outcomes and maintain their caregiver health.

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ARE COUPLES WHO PARTICIPATE IN RESEARCH TOGETHER HEALTHIER AND MORE SATISFIED IN THEIR RELATIONSHIP?

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Intimate partners affect individual's daily and long term health behaviors and influence the progression and outcomes of many chronic diseases (e.g. cancers and chronic pain). As such, couples-based interventions to affect positive health behavior change and improve disease outcomes are gaining attention from researchers. The nature of dyadic research, however, poses many challenges which often make recruitment of both partners difficult, prompting questions regarding whether there are systematic differences in couples that choose to participate and what effect those differences may have on the external validity of couples-based research. The aim of the current study is to determine if couples where both partners choose to participate in a couples' health study systematically differ from those where only one partner chooses to participate. Participants were recruited from a Bridal Expo and Facebook in a two-stage process; initial participants first completed an online survey and provided their partner's email address, then their partners were invited, via email, to complete the same online survey. Nearly all (88%) initial participants provided email addresses for their partners. Participants were surveyed about their own and their partner's health habits, mental and physical QOL, health status, and relationship quality. Data were used from the initially recruited partner in a total of N=847 unique couples; of the total sample, one third (N=286) were individuals whose partners also participated in the study (i.e. complete couples) and two-thirds (N=561) were individuals whose partners did not participate (i.e. incomplete couples). Complete and incomplete couples were compared using reports from the initially recruited partner. ANOVA and crosstabulations indicate significantly poorer health status, health habits and relationship quality within incomplete couples compared to complete couples. The majority of differences between groups were observed in reports from the participant about their partner. These health and relationship quality differences have several important implications for couples-based health research including the possibility that couples participating in health research together might be more similar to one another and may have better behaviors and relationships than couples choosing not to participate together. Ways in which this potential recruitment bias may affect study design, recruitment efforts, and couples-based intervention needs will be discussed.

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ATTACHMENT AND CHRONIC STRESS AS A PATHWAY FROM ADVERSE CHILDHOOD EXPERIENCES TO PHYSICAL SYMPTOMS

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Background: It has been repeatedly reported that adverse childhood experiences (ACEs) predict worse health outcomes in adulthood. One of the pathways proposed is that ACEs are linked to higher level of stress, which then has implications for health through altering HPA axis activities, autonomic system functioning, and immune profile. Additionally, individuals who are insecurely attached are more prone to stress reactivity. The present study proposed an integrated model in which ACE exerts its power on lifelong health through exacerbating attachment insecurity, which predisposes individuals to chronic stress. Elevated stress level then increases the risk for a host of physical problems. In addition, lack of perceived social support would mediate ACE's influence on attachment, and health anxiety would partially account for attachment anxiety's effect on physical symptoms.

Method: 205 participants were recruited on Amazon Mechanical Turk (51.2% female, 79% white, mean age=36.8). They completed a battery of questionnaires on ACEs, attachment anxiety and avoidance (Experience in Close Relationship, ECR-R), perceived chronic stress (Perceived Stress Questionnaire, PSQ), physical symptoms (Patient Health Questionnaire Physical Symptoms, PHQ-15), health anxiety (Health Anxiety Inventory, HAI), depressive symptoms (Patient Health Questionnaire Depression Scale, PHQ-8), and perceived social support (Social Provision Scale, SPS) during childhood.

Results: A path analysis was conducted to evaluate the hypothesized model. ACE had a direct (Beta= .145) and indirect effect (through social support, Beta's = -.443 and -.406) on attachment anxiety; attachment anxiety had an indirect effect on physical symptoms through perceived chronic stress (Beta's = .495 and .434) and health anxiety (Beta's = .430 and .353); health anxiety had a direct effect on chronic stress (Beta = .358) and indirect effect on physical symptoms through chronic stress (Beta's = .358 and .434). The Comparative Fit Index (CFI) for the model was .941.

Conclusion: The findings provided preliminary support for our hypothesized model from ACE to attachment insecurity, to chronic stress, and finally to physical symptoms. Limitations include reliance on retrospective self-report and lack of biological measures. Future research is needed to investigate the mechanisms behind early adversity, attachment, and stress physiology, and to ultimately inform interventions for ACE survivors that focus on fostering attachment security.

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BIOPSYCHOSOCIAL CORRELATES OF DISCRIMINATION IN DAILY LIFE

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Discrimination is associated with negative mental, physical, and behavioral indicators of health and may contribute to health disparities. The literature on the relationship of discrimination to health has largely relied on retrospective reports, with much less known about the real-time within-person association between discrimination and biopsychosocial processes. Intensive longitudinal methods (e.g., ecological momentary assessment [EMA] and daily diaries) may capture perceived experiences of, and responses to, discrimination in daily life and clarify the temporal sequence of events, thus helping to elucidate potential mechanisms linking discrimination to poor health. This review identified studies of discrimination related to race, sex, weight, and sexual orientation, and examined the prevalence and frequency of discrimination in daily life, its psychosocial and contextual correlates, and moderators of the effects of discrimination on health. EMA and daily diary data suggest that discrimination may occur more frequently than is clear from survey research (e.g., due to weight, nearly once per day; due to race, up to twice daily; due to sexual orientation, up to twice weekly; due to sex, up to three times daily). Discrimination is enacted by a variety of perpetrators (e.g., friends, teachers), through various means (e.g., verbal expressions, overt behavior), and across a range of settings (e.g., medical, employment, educational, and social settings). Perceived discrimination was reliably associated with poorer mental health (e.g., negative affect, rumination, depressive symptoms) in daily life. Among some stigmatized groups (e.g., sexual minorities) discrimination was related to social isolation and lower quality social support, whereas among others (e.g., overweight/obese individuals) discrimination was related to decreased motivation to enact positive health behaviors such as diet and exercise. This review also highlights the need for, and potential benefit of, relating momentary experiences of discrimination with health behaviors (e.g., physical activity) and biomarkers (e.g., cortisol, inflammatory cytokines) in daily life, as these may be proximal mediators of the relationship between discrimination and health outcomes. EMA studies are also important for the development of just-in-time or tailored interventions for coping with discrimination and may inform best practices in clinical settings to improve patient outcomes and reduce health disparities.

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DATING, HEALTH BEHAVIOR, AND FITBITS: RELATIONSHIP STATUS IMPACTS HEALTH BEHAVIORS IN YOUNG ADULTS

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Introduction: Long-term romantic relationships are widely recognized as impacting the health and well-being of the individuals engaged in the relationship. In addition to provision of social support and enhancement of coping, engagement in health behavior is one way in which relationships are hypothesized to impact health. However, while some research has indicated that romantic partners actively influence partners' behaviors (e.g., Canady, Lawrence, & McCoy, 2017; Vilchinsky et al., 2011), and partners' health behaviors grow more similar over time (e.g., Ask et al., 2012, Homish & Leonard, 2008), studies have generally occurred in the context of long-term romantic relationships. The current study explores differences in health behaviors which occur during shorter-term dating relationships.

Method: Participants were 19 female college students who enrolled in a two-semester prospective study. Participants completed online questionnaires via Qualtrics biweekly evaluating relationship status and frequency of engagement in a variety of both health-promoting and health-compromising behaviors (alcohol use, tobacco use, fruit/vegetable consumption, exercise, binge eating, purging, restricting calorie intake, and tanning), and wore a Fitbit throughout the study to provide a biometric measure of activity level.

Results: Participants reported having been in a romantic relationship for 120 out of a total of 231 two-week time periods for which data on relationship status was available. Profile analysis was used to evaluate similarities and differences in health behaviors for periods participants were in or out of relationships. While the overall profile remained similar, participants' amount of engagement in health behaviors differed depending on relationship status ($F(8, 117) = 12.035, p < .001$), such that participants who reported current involvement in romantic relationships engaged in higher amounts of the behaviors measured, whether health-promoting or health-compromising, than participants who reported no involvement in a romantic relationship.

Conclusion: These results suggest that some health behaviors may change as relationship status changes. More research is needed to determine potential reasons for these changes, which may vary by specific health behavior. Further evaluating the impact of dating relationships can provide key information regarding the development and maintenance of health behaviors in young adults as well as better target health behavior interventions in this population.

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DIVERSE PERCEPTIONS OF ACCESSING REPRODUCTIVE HEALTH CARE ON THE US-MEXICO BORDER: A QUALITATIVE PERSPECTIVE

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Background: In a five year period (2005–2010) the border city of Nogales, Sonora (Son), MX experienced a population increase of 30,000 inhabitants due to changing migration flows to the U.S., increased border security, and the *maquiladora* industry and the subsequent migration of people from other states. This population boom has resulted in urban disorder and deficits in education, health, and public services. Due in part to socioeconomic and sociocultural factors and the lack of comprehensive sexual and reproductive health education, the rate of adolescent pregnancies is on the rise in the city of Nogales, Son.

Objective: Our qualitative study queries local community members and key stakeholders about the perceived barriers and solutions facing immigrant women in need of reproductive health care, and how that influences adolescent pregnancy at the US-Mexico border.

Methods: We formed a binational research team to interview community leaders, health care providers, mothers of adolescent parents, and adolescent mothers to explore (1) perceived barriers and solutions to accessing reproductive health care on the border, and (2) how these factors influence adolescent pregnancy rates on the border.

Results: Participants reported structural and sociocultural barriers to accessing reproductive health care. Despite free and available contraception, misinformation about sexual and reproductive health is pervasive. Lack of access to reproductive health care, sociocultural factors, and sexual violence play a role in the high rates of adolescent pregnancy in the city of Nogales, Son.

Discussion: Qualitative findings are described, as well as current binational research strategies to address barriers to access to care on the U.S.-Mexico border. Increased communication between mothers and their children about sexual and reproductive health may be a strategy for increasing use of reproductive health care resources among adolescents and reducing the rate of adolescent pregnancy.

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MERITORIOUS AWARD WINNER

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DYADIC EFFECTS OF DISCRIMINATION ON DAILY HEALTH BEHAVIORS AMONG SAME-SEX MALE AND FEMALE COUPLES

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Among sexual minority couples, discrimination is a unique form of stress that can impact both partners. Minority stress theory posits that discrimination negatively impacts personal health, but has not been well-articulated or studied interpersonally within same-sex couples. However, the effects of stress on health can spill over across romantic partners, and health behaviors are also known to play out interdependently within romantic relationships. The current study aimed to expand our understanding of the influence of minority stress on health into a dyadic context in romantic relationships. Studies of minority stress also have typically focused on high-risk behaviors (e.g., condomless sex, drug use), and less on daily health behaviors that affect health cumulatively. The current study focuses on whether discrimination negatively impacts sleep, diet, and exercise among same-sex couples in line with minority stress theory.

Sixty same-sex couples (30 male, 30 female) completed an online observational study, including standardized self-report measures of discrimination, sleep disturbance (i.e., quality, depth, restoration), poor diet (e.g., soft drinks, fried food), healthy diet (e.g., fruits, vegetables), and physical exercise (e.g., cardiovascular, strength). 30.8% of participants identified as a racial or ethnic minority. The average age of participants was 30 years (SD = 10) and the average relationship length was 5 years (SD = 6 years; mode = 1.75 years). Actor-partner interdependence models for indistinguishable dyads tested associations between one's own discrimination and one's own health behaviors (i.e., actor effect), as well as one's partner's discrimination with own health behaviors (i.e., partner effect). Exploratory analyses tested interactions by couples' sex (i.e., male vs. female).

One's own discrimination affected own sleep problems ($B=.18, p<.05$). In addition, one's partner's discrimination affected own sleep disturbance ($B=.13, p<.05$). Own discrimination was also positively associated with own poor diet, but not partner's diet ($B=.06, p<.05$). No actor or partner effects were significantly associated with healthy diet or exercise ($p's>.05$). No effects varied across couples' sex (all interaction $p's>.05$).

Findings indicated that discrimination appears to impact some daily health behaviors of sexual minority individuals and their romantic partners, particularly sleep. These results are among the first to document the cross-over effects of sexual minority stress on one's own and one's partner's daily health. The interpersonal impact of discrimination on same-sex relationships should be considered in both prevention studies and public policy.

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EXAMINATION OF THE RELATIONSHIP BETWEEN IN-STORE ENVIRONMENTAL FACTORS AND FRUIT AND VEGETABLE PURCHASING AMONG HISPANICS

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Retail food environments have received attention for their influence on dietary behaviors and for their nutrition intervention potential. To improve dietary behaviors, such as fruit and vegetable (FV) purchasing, it is important to examine its relationship with in-store environmental characteristics. This study used baseline data from the *El Valor de Nuestra Salud* study to examine how in-store environmental characteristics such as product availability, placement and promotion were associated with FV purchasing among Hispanic customers in San Diego County. Mixed linear regression models indicated that greater availability of fresh FVs was associated with a 0.36 dollar increase in FV purchasing ($p=.01$). Placement variables, specifically each additional square foot of display space dedicated to FVs ($p=.01$) and more fresh FV displays ($p=.01$), were associated with a 0.02 dollar increase and -0.29 dollar decrease, respectively, in FV purchasing. Introducing FV promotions in the final model was not related to FV purchasing. Exploratory analyses indicated that men reported spending 3.69 fewer dollars on FVs compared to women, controlling for covariates ($p=.02$). These results can help inform interventions targeting in-store environmental characteristics to encourage FV purchasing among Hispanics.

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EXPLORING SOCIAL AND ENVIRONMENTAL INFLUENCES ON DIETARY BEHAVIORS OF URBAN, MINORITY PREADOLESCENTS

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Background: Disproportionately high rates of childhood obesity exist in Latino, African American (AA)/Black, and low-income, urban populations. Among preadolescents, an understudied population, influences on dietary behaviors begin to expand beyond the home environment as food decisions become more independent. Although it is well-established that child dietary behaviors affect obesity risk, it is less clear how social and physical environments affect food choices, particularly within preadolescent minority populations. The purpose of this study is to identify and explore these influences.

Methods: Latino and AA/Black parents ($n=20$) and children ($n=32$) age 9–12 years from low-income neighborhoods in Northern Manhattan, New York City area participated in focus groups (4 child-only, 3 parent-only) or interviews (6 parent-child dyads), which addressed dietary knowledge, attitudes, and practices. Sessions were recorded and transcribed. Inductive and deductive processes were used to code and analyze transcripts in order to identify and categorize social and/or physical environmental influences related to child dietary behaviors.

Results: Parents and children both had high levels of dietary knowledge, especially of what constituted healthy dietary behaviors. Social interactions and their effects on child dietary behaviors were identified and categorized into three settings: child's home, other people's homes, and school. Within the home, mothers were the primary purchasers and preparers of food for their children. Mothers laid out specific restrictions and rules for their children to follow. When children stepped out of their home environment, these rules were more likely to be ignored. In peers'; homes, children frequently chose foods they saw their friends consuming, which were less likely to be healthy. In regards to the school environment, mothers frequently packed their children lunches to bring to school. However, children still emulated peer food selection within the school environment, which were also less likely to be healthy.

Conclusions: Dietary behaviors among Latino and AA/Black youth are influenced by peer food choices and maternal feeding practices, often tied to specific settings such as the home and school. Developing interventions that encourage healthy eating through the unique social influences within specific physical environments may improve dietary behaviors within this at-risk population and, thus, decrease obesity risk.

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PREDICTING BINGE DRINKING TRAJECTORIES AND THEIR INFLUENCE ON IMPAIRED DRIVING AMONG COLLEGE STUDENTS

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Background: Alcohol impaired driving (AID) and binge drinking are major health concerns among college students. Although the link between binge drinking and AID is well established, knowledge regarding binge drinking patterns, the factors influencing binge drinking, and the associations between consumption patterns and alcohol related risk behaviors is lacking.

Aims: To examine heterogeneous trajectories of binge drinking during college and tests factors that might predict class membership as well as class membership outcomes.

Methods: Data were obtained from a sample of 1,265 college students ($M_{age} = 18.5$, $SD = .66$) as part of the Longitudinal Study of Violence Against Women ($N = 1,265$; 59.3% female; 69.2% white). Analyses were completed in three stages. First, a growth curve analysis was conducted to identify trajectories of binge drinking over time. Second, growth curve mixture modeling analyses were pursued to assess unobserved growth trajectories of binge drinking without predictors. Lastly, parental drinking variables were added to the model as predictors of class membership, and AID and being a passenger of a drunk driver were added to the model as outcomes.

Results: Three binge drinking trajectories were identified: *high-convex*, *medium-concave* and *low-increasing*. Parental drinking was associated with being in *high-convex* and *medium-concave* classes. Compared to the *low-increasing* class, the *high-convex* and *medium-concave* classes reported more AID and being a passenger of a drunk driver more frequently.

Conclusions: Parental drinking may affect children's later engagement in AID. Efforts should focus on parents' education regarding the consequences of parental modeling of alcohol consumption.

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PREDICTORS OF EARLY CANCER DETECTION BEHAVIOR AMONG BLACK MALES

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With significant medical improvements and early detection, there has been an overall decrease in mortality and morbidity rates resulting from a cancer diagnoses. Despite this improvement in national and global health status, Black males continue to be diagnosed at a later stage, with a more aggressive disease state. To contribute to our understanding of the complexity of incidence and mortality due to cancer, adult Black males ($N=222$) 30–63 years of age were surveyed to determine the implication of demographic (age, education), social (self-esteem, cancer beliefs) and psychosocial characteristics (perceived vulnerability to cancer diagnoses, illness attitude) on early cancer detection behaviors. Results showed age ($b = -.21$, $pb = .18$, $pb = -.55$, $p=.00$), and illness attitude ($b = 2.44$, $pM = 8.16$, $SD = 3.9$) and younger ($M = 8.43$, $SD = 4.6$) participants; $t(146) = 220$, NS). Focusing exclusively on Black males enhances our understanding of this adult population, and data from this study holds promise in informing health messages that may reduce deleterious health behaviors and outcomes among this marginalized population.

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PRESENCE OF SUPPORT DURING STRESSFUL/UPLIFTING EVENTS PREDICTS CARDIOVASCULAR OUTCOMES

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Social relationships or interactions are a well-known marker of physical health (i.e., Holt-Lunstad, Smith, & Layton, 2010) and have been tied to healthier physiological profiles (Uchino, 2006); however, not all social relationships are health-promoting (i.e., Uchino, 2013). The current study is a re-analysis of an archival dataset that was collected across two phases: Phase 1 included a self-report survey and Phase 2 included a physiological assessment ($n = 305$; 73% female; mean age 21.59, $SD = 5.15$). Fifty-nine percent of the sample self-identified as European American, 18% African American, 11% Latino(a), and 12% as Asian, Native American, or other ethnicity. In the survey, participants were asked to describe three stressful and three uplifting events they had experienced throughout their lives and whether support was present during these events. Sixty-eight percent of the sample endorsed others being present during all uplifting events, while 49% endorsed others being present during all stressful events. Results indicated that greater presence of social support was negatively associated with cardiovascular health, such that a higher presence of support was associated with higher diastolic blood pressure (DBP) ($r = .12$, $p = .04$) and lower heart rate variability ($r = -.14$, $p = .02$). Further, presence of support ($t = 2.46$, $p = .02$) was still a significant predictor of DBP when adjusting for age, sex, and race ($R^2 = .14$, $F(8, 281) = 5.47$, $p < .001$). These findings demonstrate that mere presence of support during important life events (whether stressful or uplifting) may not be health promoting. The mechanisms by which support is health promoting need to be better understood in order to inform relationship science and interventions that promote support to improve quality of life and health.

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REGIONAL HEALTH DISPARITIES AMONG OLDER ADULTS IN THE UNITED STATES

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Unequal access to social, financial and educational services cause differences in the mental and physical health of older adults. This study investigated health disparities of older adults in the United States using the 2014 Behavioral Risk Factor Surveillance System published by the CDC. Respondents selected were 65 years and older, and analyzed variables included: general health status, BMI, physical and mental health status, exercise, history of depression and cognition. When compared with other regions, the southern U.S. had the highest percentage of individuals endorsing poor perceptions of health (27.3%), a lifetime prevalence of depression (16.3%) and trouble with cognition (11.0%). Of those who reported a lower quality of health in last month, individuals from the South indicated the highest average of days of poor physical and mental health (14.6 and 12.0, respectively). With respect to health behaviors, this same region demonstrated the lowest percentage of individuals participating in physical activities (67.0%). Obesity was found to be highest in the Midwest (29.1%) and South (27.3%). Difference in health indicators between U.S. regions are interpreted using the social determinants perspective and fundamental cause of health inequalities. According to the 2014 U.S. Census, the southern region has the highest percentage of older adults living below the poverty line, as well as the lowest household annual income and education rate. Differences in social capital and unavailable resources shape older adults' health behaviors by determining their lifestyle choices, and ultimately influence their physical and mental health.

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ROMANTIC RELATIONSHIP SATISFACTION AND AMBULATORY BLOOD PRESSURE DURING SOCIAL INTERACTIONS

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Background. Mechanisms linking high-quality romantic relationships and improved cardiovascular health, including lower blood pressure (BP), are not fully understood. It may be that people experience lower BP specifically when interacting with a romantic partner. This study parsed the effects of different types of social interactions on ambulatory BP (ABP) and tested whether romantic relationship satisfaction moderated these effects. We hypothesized that participants who were more satisfied with their romantic relationship would have reduced BP during partner interactions. Additionally, we explored whether any BP reduction due to high satisfaction extended to other social interactions (e.g., friends, coworkers).

Methods. Participants ($N=594$) were drawn from a larger study on lab BP/ABP and cardiovascular health. Mean age was 46.5 ± 9.3 . Participants were 57.4% female and 65.1% were married. Participants reported on romantic relationship quality and completed 24 hours of ABP monitoring. At each reading, participants also reported on whether or not they had just had a social interaction and with whom. Multilevel models were used to account for nesting of data over time.

Results. Relationship satisfaction ($M=108.2 \pm 9.0$) significantly modified the effect of social interactions on systolic and diastolic BP (SBP, DBP). Participants with high (+1SD) relationship satisfaction had significantly decreased SBP during interactions with a romantic partner, $B=-0.77$, $p=.02$; low satisfaction (-1SD), $B=.59$, $p=.14$. This pattern also emerged for DBP: high satisfaction, $B=-.19$, $p=.14$; low satisfaction, $B=1.01$, $p<.01$.

Participants'; satisfaction with their romantic partner also modified SBP response during interactions with a friend such that SBP was elevated only if satisfaction was low, and DBP response when interacting with an "other" such that DBP was elevated only if satisfaction was high.

Conclusion. In support of study hypotheses, this large and ecologically valid study found that participants with high levels of romantic relationship satisfaction experienced significantly lower BP during social interactions with their partner. Effects were largely restricted to romantic interactions, yet there was some evidence for spillover to other types of relationships. Studies are needed to determine whether interventions to improve satisfaction within couples might additionally benefit BP and long-term cardiovascular health.

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THE EFFECT OF MARITAL SATISFACTION AND NEUROTICISM ON AMYGDALA ACTIVATION

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Background: The relationship between amygdala activation and processing aversive stimuli and negative emotions has been well established. The amygdala is an important component of emotional processing relevant to maintaining long-term relationships, which provide emotionally complex interactions, but its role in processing positive and ambiguous stimuli is unclear. Multiple studies have established that neuroticism consistently predicts lower marital satisfaction, though the underlying mechanisms are not well understood. We hypothesized that marital satisfaction would be associated with neuroticism and amygdala activation when married individuals were exposed to emotionally complex conflict discussions.

Method: 49 married participants aged 22–42 (M=28; N=24 female) completed the Couples Satisfaction Index and the Neuroticism Subscale of the Big 5 Personality Inventory and participated in a video-recorded discussion conflict task with their spouse. Functional MRI data was obtained as each subject watched a video of the discussion task spliced with neutral visual and auditory stimuli in rotating 30 second segments. Exclusionary criteria included health factors that may have altered neural activation patterns.

Results: Participants were mostly educated, middle-income, and white (88%). In an ROI analysis of the amygdala we found significantly increased functional activation in both the left ($p=.03$) and right amygdala ($p=.04$) while viewing the recording conflict discussion in individuals with greater marital satisfaction. Higher neuroticism was similarly correlated with increased right amygdala activation ($p=.05$) during the conflict task.

Conclusions: Unlike the majority of research on the processing of emotions which focused on the impact of negative stimuli on amygdala activation, the present study focused on ambiguous stimuli. Highly satisfied couples had higher amygdala activation which may have been due to experiencing conflict as emotionally complex whereas couples with lower relationship satisfaction may have experienced simple processing of conflict discussions that were congruent with their generally negative evaluation of their marriages. Also, those with high neuroticism may process emotions effortfully which is associated with amygdala activation. This finding suggests that both the right and left amygdala are involved in the processing of more complex emotions for married individuals.

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THE INVESTIGATING NETWORK SUPPORT IN GAPS IN HEALTH AND TREATMENT IN BREAST CANCER (INSIGHT-BC) STUDY

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Background: Once diagnosed, African-American (AA) women have a 40–70% higher risk of breast cancer (BC) mortality compared with non-Hispanic white (NHW) women. Treatment differences have been implicated but there has been little investigation of the causes of these differences. While women with larger personal social networks generally have better BC survival, it is unclear how the social environment differs by race in BC survivors and how this might help explain disparities in treatment and survival. Our goal is to understand how race differences in social networks influence variation in decisions about and follow-through with treatment.

Methods: In the Investigating Network Support In Gaps in Health and Treatment in Breast Cancer (INSIGHT-BC) mixed-methods study, we will recruit a purposive sample of 30 women of AA and NHW women with stage II-III invasive BC who received treatment at the Kaiser Permanente Northern California (KPNC) Oakland Medical Center for semi-structured interviews about their social networks and perceived effects on BC treatment. Women will be selected based on differences in chemotherapy treatment status (without delays in chemotherapy, with delays, and without recommended treatment) (6 race x treatment groups of 5 women each). Participants will be frequency matched on age, stage, BC subtype, and education. We will collect egocentric social network data in in-person interviews using EgoWeb 2.0 social network software. This produces visualizations of the participant's social network which can stimulate insights about how social relationships affect their ability to manage treatment.

In quantitative analyses of 3,782 newly diagnosed women from the Pathways study and in additional women recruited from the KPNC Oakland Medical Center, we will examine race differences in social network characteristics (e.g., size, types and diversity of ties, levels of social support and burden) and will further evaluate, in analyses of the joint effects of race and social network size, associations between social networks, treatment, and breast cancer outcomes, and whether associations differ by race.

Results: In preliminary results, adjusted for education and stage, AA women had smaller networks than did NHW women ($p<0.001$). They were less likely to be married ($p<0.001$) or have large (\geq median=10) friend/relative networks ($p=0.007$), though they were more likely to participate in religious organizations ($p<0.001$). AA and NHW women reported similar overall levels of social support but AA reported lower positive social interaction ($p=0.003$), lower support from friends ($p=0.06$), less time spent with friends ($p=0.02$), and greater distance in relationships ($p<0.001$). Additional results will be presented.

Conclusion: Social network characteristics differ in AA vs. NHW women. This study will help to evaluate the role of social networks in disparities in breast cancer treatment and outcomes.

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WORKPLACE-BASED EDUCATIONAL INTERVENTION IMPROVES LATINOS' KNOWLEDGE OF AND ADHERENCE TO CANCER SCREENINGS

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Background: Latinos'; higher age-adjusted mortality from cancer and lower socioeconomic status compared to Non-Hispanic Whites makes them a priority population for testing workplace-based educational interventions. Nationally more Latinos are employed in service and manual labor jobs compared to other racial/ethnic groups. Targeting low-income Latinos through workplace-based initiatives may be a strong approach to improving cancer screening knowledge and adherence.

Methods: Latinos ages 18 and older in Utah participated in a workplace-based educational intervention from January 2015-February 2016 designed to improve knowledge and adherence of breast, cervical, and colorectal cancer screenings. We assessed the effectiveness of this intervention at baseline and follow-up among a sample of N=265 Latinos using McNemar's, univariate regression, and multivariable regressions.

Results: Knowledge of the recommended age for cervical, breast, and colorectal cancer screenings improved from baseline to follow-up (cervical=65.1% to 77.7%, breast=67.2% to 81.7%, colorectal=49.8% to 80.7%, all $p < 0.01$). Knowledge of the recommended frequency for cervical and colorectal cancer screenings increased from baseline to follow-up (cervical=34.0% to 46.5%, colorectal=72.8% to 83.8%, both $p < 0.01$). Insured participants had improved knowledge of breast cancer screening compared to uninsured participants (OR=5.28, 95% CI 1.39–20.04). Adherence to cervical, breast, and colorectal cancer screening increased from baseline to follow-up, but only increases in Fecal Immunochemical Tests (FIT) for colorectal cancer were significant (13.8% to 56.9%, $p < 0.001$). Male participants were more likely to improve in FIT adherence compared to females (OR=2.95, 95% CI 1.08–8.05). Part-time/temporary (OR=0.27, 95% CI 0.10–0.75) and unemployed/retired (OR=0.30, 95% CI 0.09–0.99) participants had lower odds of improving in FIT adherence compared to full-time employees. Participants with annual incomes \geq \$25,000 had 10.2 times (95% CI 2.75–37.95) the odds of improving in FIT adherence compared to those earning $<$ \$10,000 annually.

Conclusions: Interventions that target service industry and manual labor employees through partnerships with employers and community based organizations provide a viable intervention model for strengthening community capacity and supporting employees in improving breast, cervical, and colorectal cancer knowledge and adherence of screening among Latinos.

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APPLICATION OF INTEGRATIVE BEHAVIOR MODEL IN UNDERSTANDING DRINKING BEHAVIOR AMONG BINGE DRINKERS AND SOCIAL DRINKERS

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Binge drinking is arguably the single most important preventable cause of morbidity and mortality among college students. Understanding the nature of binge drinking among college students is complex. While colleges typically provide standardized health education interventions to prevent binge drinking, interventions may be more effective if they were tailored to reflect students'; drinking status. For example, for students who already binge drink, tertiary prevention efforts to stop binge drinking is warranted. While for students who drink socially, primary and secondary prevention efforts to monitor their alcohol intake and prevent them from becoming binge-drinkers is warranted. The purpose of this study was to explore psychosocial determinants of binge drinking behaviors among two distinct groups of students. First, we evaluated factors that would help binge drinkers to stop binge drinking, and second, we evaluated factors that would prevent social drinkers from binge drinking in the future. This was a prospective study, whereby undergraduate students ((n=233; binge drinkers (n=161); social drinkers (n=72)) from the large Southwestern University completed an on-line survey evaluating factors associated with binge drinking, and a month later binge drinking status was evaluated. Regression models showed that attitudes, perceived norms and perceived behavioral control (PBC) predicted 48.1% of the variance of intentions to stop binge drinking for binge drinkers, and 60.7% of the variance of intention to continue to not binge drink for social drinkers. Similarly, logistic regression models showed intentions, PBC, and skills predicted 16.6% of behavior for stopping binge drinking among binge drinkers and 30.9% of the behavior for continue not to binge drinking among social drinkers. The results from this study suggested attitude, especially experiential attitude, was the strongest predictor of intentions towards binge drinking for both groups. This study shows the IBM is a promising model for predicting and explaining binge drinking behavior among college students and provides more specificity towards predictive factors to design effective interventions.

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FUTURE-SELF CONTINUITY PREDICTS LOWER ALCOHOL ABUSE

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Continuous identity across time is a defining feature of the self. However, there is variability in the extent to which people subjectively experience a sense of connection with their future selves ("future self-continuity"). If people feel more connected to their future selves, they should be more likely to engage in behaviors that benefit those selves (i.e., behaviors that promote long-term benefit rather than immediate gratification). Indeed, future self-continuity has been shown to be associated with a variety of adaptive behaviors. For example, greater future self-continuity is correlated with more retirement savings, and increasing future self-continuity induces increases in saving behavior. Analogous effects have been found in diverse domains such as academic procrastination, ethical behavior, and suicidality. A recent study revealed a correlation between future self-continuity and self-reported general health, and showed that manipulating future self-continuity (using an intervention in which participants wrote letters to their distant future selves) led to increased exercise behavior. The current study examined the relation between future self-continuity and alcohol abuse. Given that future self-continuity has been associated with adaptive health behaviors, we hypothesized that greater levels of FSC would predict lower scores on an alcohol screening test. A sample (N=243) recruited from Amazon's Mechanical Turk took a survey in which they completed a measure of future self-continuity and the Short Michigan Alcohol Screening Test (S-MAST). Greater future self-continuity significantly predicted lower alcohol abuse scores ($b = -.241, p < .001$). Furthermore, the relationship held after controlling for age and gender. These initial findings suggest that people who feel more similar to their future selves show fewer tendencies for alcohol abuse. In future research, we will manipulate future self-continuity using a writing task intervention and prospectively assess alcohol consumption.

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PROJECT PAN: RELATIONSHIP BETWEEN PSYCHIATRIC CORRELATES AND NON-SUICIDAL SELF INJURY

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Background: Non Suicidal Self-injury (NSSI) is the deliberate act of harming oneself with no suicidal intent. Many undergraduates partake in this behavior, with prevalence rates as high as 35%. This population may also engage in negative health behaviors, including smoking and drinking. Studies have shown these behaviors co-occur with NSSI, but there's a dearth of health psychology literature on whether or not negative health behaviors predict / correlate with engagement in NSSI. Increased research in this area could help clarify multiple health behaviors in the NSSI population.

Purpose: The present study explored the relationship between health behaviors and engagement in NSSI.

Methods: Two hundred nineteen undergraduate students aged 18–35 ($M=20.09$; $SD=2.29$, 74% female) completed an online survey at a public university in Southern New Jersey. Participants were recruited using an IRB-approved flyer, an undergraduate psychology pool, and through class presentations.

Results: A logistic regression was conducted to predict the relationship between health behaviors and engagement in NSSI. Results indicated that individuals who partake in negative health behaviors are more likely to engage in NSSI ($OR=0.475, p<0.05$). Two point-biserial bivariate correlations were computed to assess the relationships between negative health behaviors (smoking, drinking) and NSSI. Results indicated there were no significant correlations ($r_{pb(215)}=-0.046, -0.011, ps>0.05$).

Conclusions: Participants who engage in negative health behaviors compared to their counterparts perform NSSI, irrespective of negative health behavior type.

Implications: Results indicate those who don't perform negative health behaviors are less likely to engage in NSSI. Tertiary prevention methods may need to also address (negative) health behaviors to provide comprehensive psychoeducational interventions for persons who self-report NSSI.

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UNDERSTANDING THE RELATIONSHIP BETWEEN TRAUMA, ALCOHOL AND OTHER DRUG USE AND VIOLENT CRIME.

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The majority of young people in custody have drug and alcohol related problems, with 78% classifying as risky drinkers and 89% having used illicit drugs. Furthermore, there is strong evidence of an association between substance use and violent offending specifically, with many of these young offenders also reporting significant trauma histories. The current study seeks to examine the relationship between substance use, trauma and violence in the judicial context and contemplate judge's aims in sentencing. A cross sectional analysis of sentencing remarks from courts in New South Wales, Australia was conducted. Between 2015 and 2016, a total of $N = 221$ remarks sentencing serious violent offences were available. Not surprisingly, substance use involvement was identified as an offence characteristic in three-quarters of violent offence cases ($n = 186$). A subsample of these remarks sentencing offenders aged between 18 and 25 ($n = 38$) were then exported for further review.

Among young adult offenders, robbery and assault were the most common offences, and methamphetamine and alcohol were the most commonly involved substances (43% and 29% of cases, respectively). One in four offenders had a diagnosis of Post-Traumatic Stress Disorder, over half (61%) had a history of trauma and 39% had two or more co-occurring mental health disorders. Alcohol and other drug treatment was a common goal in sentencing and addressing substance use dependence was seen as key in the offender's successful rehabilitation in the majority of cases. The analysis indicated that alcohol and other drug use were commonly implicated in violent crime and violent offending was linked to the offenders substance use, particularly in the context of the use of methamphetamine.

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USING THE INTEGRATIVE BEHAVIOR MODEL AND THEORY OF PLANNED BEHAVIOR TO PREDICT DRINKING BEHAVIOR: A SYSTEMATIC REVIEW

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Alcohol is the third leading lifestyle-related cause of death in the US. The Theory of Planned Behavior (TPB) has been extensively used in understanding and predicting health-related behavior, and now, the researcher uses the Integrated Behavior Model (IBM), an updated version of the TPB. The purpose of this study is to systematically review the literature on studies that have applied the IBM and TPB towards understanding and predicting alcohol consumption behavior, to identify modifiable targets for public health promotion interventions and campaigns. Eligibility criteria for the studies included full-text English language peer-reviewed article published between 2011 and 2016. Six databases, (i.e. ERIC and Medline) were used to identify relevant articles. The Boolean search strategy was selected with the combination of keywords: alcohol, binge drinking, and heavy drinking, Integrated Model, IBM, and TPB. Eleven articles were included in the final review. Each article was thoroughly read to extract the following variables: purpose, participants, research design, measures, results, and outcomes. Of the 11 studies identified, 2 used the IBM and 9 used the TPB. Similarly, 8 studied "binge-drinking", 1 studied "heavy-drinking", 1 studied overall alcohol consumption, and 1 studied drinking behaviors among pregnant women. Attitudes emerged as the strongest determinant of intentions and behavior followed by the perceived norms for the alcohol consumption behavior. The core constructs of IBM/TPB predicted a significant amount of variance for intentions (45% to 55%) and the drinking behaviors (26% to 46%). Evidence from this review also suggests that self-efficacy should replace the construct perceived behavioral control. In conclusion, practitioners should operationalize behavior change techniques and strategies to modify individual's attitudes and norms to help reduce drinking behaviors. An outcome of this review can inform the future studies and intervention.

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ARE PTSD SYMPTOMS ASSOCIATED WITH ENGAGEMENT AND RESPONSE TO ALCOHOL CARE MANAGEMENT FOR VA PATIENTS WITH HIGH RISK DRINKING?

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Introduction: Posttraumatic stress disorder (PTSD) may create important barriers to engagement in alcohol use disorder (AUD) care management. This study tested whether having PTSD, compared with not having PTSD, (1) interfered with engagement in AUD care management and (2) was associated with more heavy drinking days at 12-month follow up, among a sample of Veteran Affairs (VA) patients randomized to receive care management for AUD.

Methods: VA patients from three primary care sites were eligible for the Choosing Healthier Drinking Options In Primary Care (CHOICE) trial if they reported high-risk drinking (≥ 4 drinks/day for women; ≥ 5 for men, two times per week or once per week if any prior AUD treatment). This observational sub-study was interested only in patients randomized to receive AUD care management and who completed baseline screening for PTSD ($n=147$). Adjusted generalized linear regression models with Poisson and binomial distributions were used to assess the relationship between baseline PTSD and the number of nurse care visits at 12 month follow up as well as the number of heavy drinking days in past 28 days at 12 month follow up, respectively.

Results: Participants with and without PTSD did not differ significantly on baseline sociodemographic characteristics or baseline percent heavy drinking days. After adjusting for potential confounders, PTSD was *not* significantly associated with the number of visits with the CHOICE nurse ($p=0.94$). Participants with PTSD had significantly lower odds of heavy drinking days at 12 month follow up than participants without PTSD ($OR=0.77$; 95% CI: 0.65, 0.92; $p<0.01$).

Conclusions: VA patients who were at risk for heavy drinking and had PTSD were no less likely than those without PTSD to engage in AUD care management and were more likely to reduce their drinking. These findings suggest future primary care interventions for AUD should not exclude patients with PTSD or dissuade providers from treating patients with high-risk drinking on the basis of having PTSD.

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DRINKING MOTIVES AND ALCOHOL-RELATED CONSEQUENCES AMONG LATINO DAY LABORERS

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Background: Latino day laborers may engage in unhealthy alcohol use as a way of coping with immigration-related stressors, which can ultimately lead to negative health and social consequences. Interventions to reduce unhealthy alcohol use focus on weighing the pros and cons of drinking. The purpose of this study is to describe Latino day laborers' motives for drinking, as well as their alcohol-related consequences in order to inform interventions to reduce unhealthy alcohol use.

Methods: As part of the Vida PURA study, we recruited 181 Latino immigrant men from a day labor worker center to complete interviewer-administered surveys. Eligible participants had Alcohol Use Disorders Identification Test (AUDIT) scores ≥ 6 . Surveys included measures of alcohol use, drinking motives, alcohol-related consequences, and demographic characteristics. We measured alcohol use using the AUDIT and alcohol-related consequences using the 15-item Short Inventory of Problems (SIP) to calculate lifetime consequences score. We assessed differences in drinking motives and lifetime consequences by level of AUDIT risk (scores 0–7 indicate low risk or abstinence, scores 8–15 suggest unhealthy alcohol use, scores 16–19 indicate harmful and hazardous drinking and scores 20–40 suggest alcohol dependence) using chi-square tests of independence and two-sample tests of proportions.

Results: The most commonly reported drinking motives were to cope with anxiety, to enhance feelings of fun, and to socialize. However, those men with higher AUDIT scores (20–40) compared to those with lower AUDIT scores (6–19) reported higher mean levels of anxiety, enhancement, and social motives. Men with higher AUDIT scores reported an average of twelve alcohol-related consequences, while men with lower AUDIT scores reported an average of six alcohol-related consequences.

Conclusions: Initial results demonstrate that those men who are alcohol dependent as indicated by AUDIT scores ≥ 20 face additional alcohol-related consequences and have more anxiety-related motives to drink compared to those men with lower AUDIT scores. These findings suggest that brief interventions should consider using Motivational Interviewing (MI), which is a client-centered counseling style for eliciting behavior change by helping participants to explore motives and consequences of drinking. More research is needed to determine if MI is effective in reducing alcohol consumption among this population.

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HIGH-INTENSITY DRINKING: PREVALENCE RATES ACROSS ADULTHOOD BY GENDER AND RACE/ETHNICITY

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Individuals who engage in heavy episodic drinking, or consuming 4+/5+ drinks in one sitting for women/men, are at heightened risk for experiencing alcohol-related harms. An emerging body of research has found that many drinkers far exceed heavy episodic drinking cutoffs. Such "high-intensity drinking", or drinking at twice the level of a heavy episodic drinker (8+/10+ drinks for women/men), is linked with numerous harms, including alcohol use disorder. Limited attention thus far has been devoted to identifying individuals most at risk. Such information is critical for informing prevention efforts. Using a nationally representative sample of adults, the current study modeled age-varying prevalence rates of high-intensity drinking across adulthood by gender and by race/ethnicity. Data were from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC-III). Individuals who were between ages 18 and 64 and reported any alcohol use in the past year were included in study analyses ($n = 22,776$). Intercept-only time-varying effect models (TVEMs) were used to estimate the prevalence of high-intensity drinking across continuous age separately as a function of gender and race/ethnicity (White vs. Black vs. Hispanic). High-intensity drinking was generally more prevalent among men than women, with peak prevalence at approximately age 25 (40%) for men. Peak prevalence of high-intensity drinking was observed for women at age 18 (25%). High-intensity drinking prevalence steadily declined across age, with approximately 11% of men and 5% of women engaging in high-intensity drinking at age 64. Notably, confidence intervals overlapped for men and women at age 18, indicating that prevalence rates were equal for men and women at this age. In terms of race/ethnicity, rates were lowest for Black adults (14%) and remained steady from ages 18 to 64. For both White and Hispanic adults, age trends were characterized by peaks occurring around age 21 followed by steady declines, with White adults having a slightly higher rate than Hispanic adults. Findings highlight several ages at which disparities in high-intensity drinking were most prominent across both gender and race/ethnicity. Results suggest that White and Hispanic adults and men are key targets for intervention throughout young adulthood. In addition, as women peak in high-intensity drinking at age 18, prevention efforts may be warranted in late adolescence for this subgroup.

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INVESTIGATING ETHNIC DIFFERENCES IN MARIJUANA USE AMONG HAWAII YOUTH: 2011 - 2015

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Background: Youth marijuana use remains a concern nationally, with much research devoted to understanding the risk and protective factors related to use. Modeling these factors using an ecological model necessitates that research attempt to integrate multiple levels of influences on use (i.e., self, family, community, society). One step in understanding cultural influences on youth marijuana use is to first investigate disparities in use amongst ethnic groups, especially in Hawaii which comprises of several ethnic groups.

Purpose: To examine youth marijuana use in Hawai'i across different ethnic groups.

Methods: The marijuana-related use indicators from the Youth Risk Behavior Survey – Hawai'i for years 2011, 2013, and 2015 were examined. Rates are presented for youth in grades 9 through 12.

Results: In 2015, Native Hawaiian youth endorsed higher rates of lifetime marijuana use (47%; 95% CI: 43.2 – 50.8) than all ethnic groups other than Other Pacific Islander students (37.4%; 95% CI: 30.1 – 44.6), and was higher than the national rate (38.6%). This was also true in 2013, and in 2011, Native Hawaiian youth had significantly higher rates than all other ethnic groups measured (51.1%; 95% CI: 46.9 – 55.3).

In 2015, Native Hawaiian (28.8%; 95% CI: 24.9 – 32.7), Caucasian (22.9%; 95% CI: 19.4 – 26.3), Other (22.5%; 95% CI: 19.9 – 25.1), and Other Pacific Islander (22%; 95% CI: 15.8 – 28.2) students had the higher rates of current marijuana use than Filipino (11.6%; 95% CI: 7.6 – 15.7), Japanese (10.1%; 95% CI: 4.6 – 15.6), and Other Asian (5.4%; 0.6 – 10.2) students, and was again higher than the national rate (21.7%)

A similar pattern emerged for early use, such that Native Hawaiian (17.4%; 95% CI: 14.6 – 20.2), Other Pacific Islander (13.9%; 95% CI: 8.5 – 19.3), and Other youth (10.1%; 95% CI: 7 – 13.3) more frequently endorsed use before age 13 than did Filipino (5.5%; 95% CI: 3.6 – 7.4), Japanese (3.5%; 95% CI: 1.2 – 5.9), and Other Asian youth (2.6%; 95% CI: 0.5 – 4.8). The national rate for 2015 was 7.5%.

Conclusions: Overall, it appears that Native Hawaiian, Other Pacific Islander, Caucasians, and Other students had the highest lifetime, current, and early use between 2011 – 2015. Culturally appropriate and evidence-based programs are suggested to target groups with consistently higher rates of use. Additional research to understand the levels of influence on youth in these groups is needed to design such prevention and intervention efforts.

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LINKING AND SYNCING STAKEHOLDERS - ADDRESSING THE PRESCRIPTION OPIOID CRISIS IN HAWAII

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Opioid misuse is becoming the leading cause of poisoning deaths nationwide. From 2010–2014, prescription opioids contributed to 35% (270) of the 778 drug overdose deaths in Hawaii. In response, the Data-Driven Prevention Initiative (DDPI), funded by the CDC, collaborated with the State Targeted Response to the Opioid Crisis (STR) funded by the SAMHSA, by launching the Opioid Abuse Initiative. This fostered interagency networks amongst stakeholders to identify the concerns, resources, and gaps that exist to inform a statewide Strategic Plan. A critical component of the DDPI and STR Projects is a needs assessment consisting of a stakeholder survey, environmental provider map, literature review, existing database scan, and legislative policy summary. The number of respondents from each stakeholder group were: prevention (69), treatment (35), medical providers (including physicians, nurses, pharmacists, dentists, and veterinarians) (1,266), policymakers (7), law enforcement (42), and insurance (17). Survey results revealed promising areas of policy, education, and data-sharing approaches to combat the local prescription opioid crisis. In response and under directive from the Governor and Director of Health, in 2017, two committees were created with representation across sectors to coordinate the Strategic Plan. The Executive Steering Committee on Substance Use (ECSU) provides support and direction for implementation. Under the ECSU is the Opioid Abuse Prevention Strategic Planning Committee (OPSPC), which focuses on development. The OPSPC further breaks down into workgroups that concentrate on specific aims rooted in best practices areas of the opioid issue as supported from national recommendations, the literature, and the needs assessment survey. The workgroups are: Treatment Access; Prescriber Education & Pain Management Practices; Data-Informed Decision Making; Prevention & Public Education; Protocols for Opioid Prescription; and Support for Law Enforcement & First Responders. Organizational categories represented include: State Departments; Coalitions; Police; Insurance agencies; University; Legislators; Prevention and Treatment agencies, and Medical Providers. Currently, the Hawaii statewide Strategic Plan against prescription opioid abuse is being developed with implementation planned for mid-2018.

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NARCISSISTIC GRANDIOSITY AND RISKY HEALTH BEHAVIORS IN COLLEGE STUDENTS

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Narcissism is a generally maladaptive aspect of personality characterized, in part, by an overriding need for recognition and admiration in order to maintain an inflated sense of self (i.e., grandiosity). Grandiosity encompasses related, yet theoretically distinct components, such as leadership and authority striving (e.g., to demonstrate one's superiority and willfulness), exhibitionism, and a general willingness to take advantage of others to meet entitled expectations. In medical patient populations, grandiosity has been associated with behavioral processes known to influence health outcomes, including high-risk substance use and sexual behavior. Evidence also documents rising rates of grandiosity in college students, highlighting the importance of examining the relationship of grandiosity to the health and well-being of college students: in particular, the tendency to engage in risky health behaviors. In this study, college men and women ($n=122$; $M_{age}=19.51$, $SD=1.70$, 75.2% women) completed self-report measures of grandiosity and specific grandiose traits (i.e., "leadership/authority," "grandiose exhibitionism," and "entitlement/exploitativeness"), problematic alcohol consumption, and number of sex partners over the last three months. Grandiosity was positively associated with problematic alcohol consumption ($\beta = .33$, $p = .05$), and gender moderated a positive association between grandiosity and number of recent sex partners: compared to college women high in grandiosity, college men high in grandiosity reported having more sex partners during the last three months ($\beta = -.41$, $p = .05$). A similar gender by entitlement/exploitativeness interaction was observed for number of recent sex partners ($\beta = -.45$, $p < .01$). Overall, these results suggest college students higher in grandiosity may be at increased risk for a variety of poor health outcomes associated with problematic alcohol consumption (e.g., accidental injury, liver disease) and having multiple concurrent sex partners (e.g., contracting STIs). As such, increasing prevalence rates of grandiosity among college students may warrant increased concern for their long-term health and well-being. By extension, colleges may benefit from developing and testing treatments to reduce health behavior risks associated with grandiosity.

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PREDICTORS OF ALCOHOL USE AMONG AN AFRICAN AMERICAN CHURCH POPULATION: THE ROLE OF RELIGIOSITY

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Although African Americans (AAs) are more likely to abstain from alcohol and report drinking less often than Whites, they are at greater risk for disease (e.g., liver cirrhosis), death, and social consequences (e.g., arguments/fights, work difficulties, legal problems) due to alcohol use – even at low levels of consumption. Additionally, studies suggest AAs may be less likely to initiate and engage in treatment for alcohol-use disorders than Whites. Studies indicate AAs tend to be highly religious and suggest that religious involvement may be a protective factor against alcohol-related problems. Given these disparities, further understanding of sociodemographic factors related to alcohol consumption among AA church-affiliated populations may assist in informing faith-based, early intervention efforts. The present study examined potential predictors (e.g., gender, religiosity, perceived stress, sleep, violence exposure, cigarette use, overall health) of alcohol consumption using baseline survey data from Project Faith Influencing Transformation (FIT), a diabetes/heart disease prevention intervention piloted in six AA churches and their community outreach ministries (e.g., food/clothing programs). Church and community participants ($N=352$) were predominantly female (68%) and had an average age of 54 ($SD=13$). Results indicated that the majority of participants (78%) reported consuming alcohol very seldom or never, and the remaining participants (22%) reported consuming alcohol several times per month or more. Preliminary analyses indicated that there were significant negative relationships between alcohol use and age ($r = -.1$, $p = .07$), gender ($r = -.09$, $p = .09$), sleep ($r = -.11$, $p = .06$), religious engagement ($r = -.22$, $p < .001$), and collaborative religious coping ($r = -.10$, $p = .06$). There were significant positive relationships between alcohol use and self-directive religious coping ($r = .10$, $p = .06$) and tobacco use ($r = .25$, $p < .001$). Education, perceived stress, violence exposure, past mental health diagnosis, overall health, and passive religious coping were not significantly related to alcohol use. A p -value of .1 was utilized to determine which variables to include in the regression analysis. In the linear regression model, religious engagement negatively predicted alcohol use ($\beta = -.18$, $p = .01$) and tobacco use positively predicted alcohol use ($\beta = .16$, $p = .01$). Age, gender, sleep, collaborative religious coping, and self-directive religious coping were not significant predictors of alcohol use. Findings of the present study suggest that given the high co-occurrence of alcohol and tobacco use, future intervention efforts should consider addressing both as well as targeting individuals with lower levels of religiosity (e.g., community members served through outreach ministries) who may be more at-risk for alcohol-related consequences.

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READINESS FOR IMPLEMENTING WEB-BASED INTERVENTIONS FOR THE PREVENTION OF RISKY SUBSTANCE USE AT GERMAN UNIVERSITIES

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Background: Web-based programs for the prevention and/or reduction of risky substance use appear to be appropriate for reaching a broad spectrum of university and college students. However, little is known about effective strategies for scaling these programs up in the university context. The aim of the DIOS-project was to assess readiness to implement web-based interventions at ten universities using an adapted version of the community readiness assessment in order to prepare scale-up.

Methods: Forty qualitative interviews with stakeholders at ten universities were conducted. The Community Readiness Assessment (CRA) by Stanley (2014) was translated into German, adapted to the German university context, and included questions addressing five dimensions: (1) existing knowledge among students about campus-wide interventions/efforts, (2) key persons/organizations in the setting promoting or implementing programs/strategies, (3) perceived university climate towards promoting or implementing programs/strategies, (4) existing knowledge of students regarding the issue, and (5) existing resources put into preventive programs. The transcripts of the interviews were scored by two independent researchers, using pre-defined scoring rules. For each university, a score ranging between 1 (no awareness) and 9 (community ownership) was determined.

Results: Overall, readiness for implementing web-based interventions across universities was rather low with universities rarely reached levels beyond a score of three. Looking at the scores for the individual dimensions, scores ranged from 1 (no awareness) - 4 (preplanning). On average, universities displayed the following scores for the individual dimensions: 2.4 (range: 1–4) for dimension (1), 3.8 (range: 2–5) for dimension (2), 4.0 (range: 3–5) for dimension (3), 3.8 (range: 3–4) for dimension (4), and 4.4 (range: 3–5) for dimension (5).

Conclusions: The adapted CRA was useful for determining different levels of implementation readiness at German universities. Universities included in this study displayed low levels of readiness for implementing web-based programs for the prevention and/or reduction of risky substance use. Based on the results of the assessment, universities received feedback on how to take the necessary steps to increase readiness and to prepare for program implementation. Whether scale-up at these universities will be successful, will be the subject of future research.

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SMOKELESS TOBACCO USE AND LOW BIRTH WEIGHT CHILD AMONG WOMEN IN A RURAL SETTING OF INDIA.

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Introduction: Low birth weight and preterm birth are powerful determinants of morbidity and mortality in newborn babies and infants. It has been known for more than 40 years that babies born to mothers who smoke weigh less than babies whose mothers don't smoke. Smoking during pregnancy also increases the risk for preterm delivery. In South East Asia smoking among women may be rare, but use of smokeless tobacco is common. There are indications that using smokeless tobacco could be as detrimental to fetal health as cigarette smoking.

Aim: To study the effect of using smokeless tobacco during pregnancy on babies' birth weight at birth.

Materials and Methods: A prospective cohort study was carried out in a teaching hospital in a rural setup among 54 pregnant women who had used smokeless tobacco product at least once a day for the past six months. The frequency of use was categorized as light (one to four times per day) or heavy (five or more times per day). Commonly used forms of tobacco was betel quid (paan) with tobacco, gutka, and paan masala are chewed and generally retained in the mouth for longer periods. They were followed for a period of seven months and birth weight of the newborn was measured.

Results: Smokeless tobacco use was associated with an average reduction of 105 g in birth weight (95% confidence interval 30 g to 181 g). The odds ratio for low birth weight was 1.6 (1.1 to 2.4), adjusted by logistic regression for maternal age, education, socioeconomic status, weight, anaemia, antenatal care, and gestational age. The adjusted odds ratio for preterm delivery (< 37 weeks) was 1.4 (1.0 to 2.1); for delivery before 32 weeks it was 4.9 (2.1 to 11.8) and before 28 weeks it was 8.0 (2.6 to 27.2).

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STRUCTURAL AND SOCIOCULTURAL BARRIERS TO ALCOHOL ABUSE TREATMENT SEEKING: A QUALITATIVE STUDY WITH MEXICAN-ORIGIN MALES

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Background: Research suggests that Mexican origin (MO) men experience disproportionate levels of adverse health and social consequences of alcohol abuse when compared to non-Hispanic whites (NHW). Despite the disparate burden of alcohol-related consequences, MO men face greater barriers than their NHW counterparts in accessing, engaging, and completing alcohol abuse treatment services. Little is known about how individual (E.g. knowledge) and sociocultural (E.g. cultural norms) factors interact with the social context (E.g. neighborhood disadvantage) to influence treatment seeking behaviors among MO males.

Purpose: To examine MO male perspectives regarding the influential factors of alcohol abuse treatment-related behaviors that can lead to disparate treatment engagement and completion rates.

Methods: Twenty semi-structured interviews were completed with MO men (age: 44.6 ± 11.3 years), 50% of whom had limited English language proficiency. We conducted a thematic analysis using a hybrid deductive-inductive analysis strategy centered in an *a priori* developed codebook that was supplemented with iterative analysis of interview transcripts.

Results: Findings suggest the presence of a complex relationship between structural-, sociocultural-, and individual-level factors related to treatment seeking. Structural barriers were related to lack of insurance and high costs hindering successful treatment. Moreover, dissatisfaction with treatment was centered in; 1) disapproval of treatment created by poor experiences resulting in distrust of sliding-scale and free programs; and 2) inadequacy of communication between patient and provider due to poor language and cultural responsiveness. Sociocultural factors were related to difficulties problematizing alcohol abuse due to cultural normalization of consumption, and societal stigmatization of treatment. Individual factors were related to *machismo*-bound pride as well as lack of knowledge.

Conclusion: There is a need for culturally and linguistically responsive dissemination of accurate information about treatment availability, eligibility, and process. Awareness building efforts also need to target the Hispanic male community regarding the detrimental effects of alcohol-related problems and treatment, in order to diminish associated stigma. Lastly, increased or redistributed funding for linguistically and culturally responsive programs is also needed in communities with large Hispanic populations in order to meet a growing demand for services.

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VARIABILITY IN POSITIVE AFFECT, ALCOHOL CONSUMPTION AND MENTAL HEALTH AMONG MOTHERS

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Affective volatility (i.e., variability) is typically conceptualized as a marker of poor behavioral and psychological health. However, whether variability in affect is detrimental to health may depend on one's usual or average level of affective experience. Amongst individuals who experience low average positive affect, greater vacillation between bouts of joy and anhedonia may be associated with better health outcomes relative to experiencing a restricted range of positive affect. This study therefore tested the hypothesis that mean levels of positive affect captured via an 8-day intensive repeated Ecological Momentary Assessment (EMA) would moderate the association of EMA-measured positive affect variability with behavioral and psychological health outcomes amongst mothers (N = 202; M_{age} = 41 years, Range = 24–57; 49% Hispanic) with young children. Mixed Effect Location Scale Modeling parsed variance in subject-level means and variances for positive affect, and these random effects were subsequently entered in subject-level regression models predicting with alcohol use (i.e., frequency of consumption, binge drinking), depressive symptoms, and anxiety assessed through a baseline questionnaire. Subject-level mean positive affect moderated the associations of subject-level variability in positive affect variability with alcohol consumption frequency (Interaction: $\beta = .22, p = .02$) and depressive symptoms (Interaction: $\beta = .20, p = .02$). More positive affect variability was associated with greater alcohol consumption and depressive symptoms at higher positive affect mean levels, whereas more positive affect variability was associated with less alcohol consumption and depressive symptoms at low mean positive affect. Such interactions were not significant for anxiety and binge drinking. Results from this study reveal that positive affect volatility is not unilaterally associated with poor behavioral and psychological health. Also, intensive longitudinal modeling of interactions of subject-level mean and variability may provide incremental information in psychopathology research and a nuanced perspective on the role of positive affect variability in the tailoring of clinical services for mothers.

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Thursday April 12, 2018 8:00 AM-9:15 AM

Symposium 1

8:00 AM-9:15 AM

THE NIH SOBC RESEARCH NETWORK: EXTENDING THE REACH OF BEHAVIOR CHANGE SCIENCE

Jennifer A. Sumner, PhD¹, Jun Ma, MD, PhD², Joshua M. Smyth, PhD³, Donald Edmondson, PhD, MPH⁴, Susan M. Czajkowski, Ph.D.⁵, Sherri Sheinfeld Gorin, PHD⁶

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Unhealthy behaviors—including smoking, overeating, medication nonadherence, and physical inactivity—contribute to negative health outcomes and chronic disease. Unfortunately, it is extremely difficult to initiate and maintain lasting healthy behavior changes. The NIH Common Fund's Science Of Behavior Change (SOBC) program brings together researchers across disciplines to address these challenges and develop a more unified science of behavior change. The program aims to improve our understanding of mechanisms of behavior change by supporting cross-cutting research that integrates basic and translational science. In 2015, the SOBC Research Network was formed, bringing together eight interdisciplinary research teams to employ a mechanism-focused, experimental medicine approach to behavior change research. These researchers are developing measures of putative intervention targets related to common mechanisms of behavior change, including self-regulation, stress reactivity and resilience, and interpersonal and social processes. The teams then engage these targets through experimentation and/or intervention and examine subsequent behavior change. In this symposium, two members of the SOBC Research Network will provide examples of this mechanism-focused, experimental medicine approach to behavior change research. One project representing self-regulation and one project representing stress reactivity and resilience were selected; researchers will present initial findings from their projects and share information regarding measures of their relevant mechanisms. Next, a representative from the SOBC Research Network Resource and Coordinating Center will introduce the SOBC Measures Repository, a web-based resource featuring behavioral science measures that have been (or are in the process of being) validated based on the SOBC experimental medicine approach. The symposium will conclude by having an NIH representative review the implications of the SOBC approach and Measures Repository for basic and translational research and discuss how initial findings have the potential to influence prevention and treatment strategies.

Symposium 1A

UNDERSTANDING TREATMENT RESPONSE TO INTEGRATED BEHAVIOR THERAPY FOR COMORBID OBESITY AND DEPRESSION IN PRIMARY CARE

Jun Ma, MD, PhD

Background: Comorbid obesity and depression exacerbates morbidity and disability. Integrated therapy for patients with both disorders are lacking in primary care; variability in treatment response is unknown.

Methods: Obese depressed adults (n=409) from 8 primary care clinics were randomized to usual care or Integrated Coaching for Better Mood and Weight, which combines problem-solving therapy for depression and a patient-directed diabetes prevention program for weight loss, plus as-needed antidepressant medication management. We used polynomial regression to model individual treatment response trajectories with serial Patient Health Questionnaire (PHQ9) and weight data over 1 year. We then conducted disjoint cluster analysis on the intercept, linear and quadratic coefficients of individual trajectories for PHQ9 and weight separately, and compared clusters (ANOVA, χ^2) on baseline characteristics and intervention adherence.

Results: Improved PHQ9 and weight loss were related ($r=0.17$, $P=0.04$), with 3 clusters for each, but the 2 sets of clusters were not significantly correlated. **PHQ9** clusters differed in baseline symptoms and trends of improvement. **Cluster 1** (27% of participants) had milder baseline symptoms and steady improvement [intercept $\beta_0=5.80$ ($P<.001$), linear $\beta_1=-0.08$ ($P=0.003$), quadratic $\beta_2=0.001$ ($P=0.11$)], and **cluster 2** (47%) had moderate baseline symptoms and then improvement [$\beta_0=10.21$, $\beta_1=-0.26$, $\beta_2=0.004$ (all $P<0.001$)]. **Cluster 3** (15%) had the worst baseline symptoms that improved but then rebounded [$\beta_0=14.54$, $\beta_1=-0.56$, $\beta_2=0.01$ (all $P<0.001$)]; they also had the highest baseline anxiety and post-traumatic stress, most negative problem-solving orientation, worst disability and quality of life, most early intervention dropouts, poorest weight and physical activity self-tracking. **Weight change (%)** clusters ($\beta_0=0$ for all) differed in patterns of initial decline and later regain. **Cluster 1** [24%; $\beta_1=-0.05$ ($P=0.003$), $\beta_2=0.0003$ ($P=0.63$)] had steady but the least weight loss, and less self-tracking (v. cluster 2). Weight loss was moderate in **Cluster 2** [31%; $\beta_1=-0.36$, $\beta_2=0.006$ (both $P<0.001$)] and the most in **cluster 3** [12%; $\beta_1=-0.70$, $\beta_2=0.01$ (both $P<0.001$)], with modest regain in both.

Conclusions: These results have important implications for early identification of targeted interventions. This experimental medicine approach will lead to improved understanding of the mechanisms of varied treatment responses in order to optimize individualized treatment.

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Symposium 1B

EVERYDAY STRESS RESPONSES AND HEALTH BEHAVIORS

Prof. Joshua M. Smyth, PhD

Our project applies the SOBC approach by examining the association of ecologically valid stress response components to sleep and physical activity. We use repeated measures from everyday life to examine within-person fluctuations in specific components of stress responses (reactivity, recovery, and pile-up/frequency) as potentially unique predictors of sleep and activity. Five independent data sets from diverse samples were used: 3 Ecological Momentary Assessment (EMA) and 2 Daily Diary (DD) studies. Participants (N range across studies: 117–2022, range of mean age: 41–56, range of % female: 51–74) completed momentary surveys 5/day for 2–14 days in EMA, or an evening survey in DD for 7–14 days, asking about stressors and indicators of stress response. Subsets of sleep variables (reported sleep quality, difficulty falling asleep, sleep duration) were collected daily across the 5 studies, and device-assessed physical activity data was collected in 2 EMA studies. Indicators of reactivity (initial rise in response to stressor), recovery (degree of return to baseline following stress response), and pileup (number of stress responses) were used as prospective predictors of sleep indicators (day level) and activity (over the upcoming 2hrs) in multilevel models. Higher within-person stress reactivity was prospectively associated with lower sleep quality; individuals reported poor sleep quality following days with higher than average levels of stress reactivity. Difficulty falling asleep, measured in only one study, was higher following days with higher than average stress reactivity. There were no systematic relationships between stress recovery and sleep. Stress response pile-up was associated with poorer sleep quality, more difficulty falling asleep, and reduced sleep duration. Stress reactivity and recovery did not predict device-assessed physical activity. Stress response pileup prospectively predicted lower activity counts. By applying the SOBC approach across multiple independent data sets we show that naturalistic stress responses are important predictors of enacting sleep and activity behaviors; additionally, that components of the stress response are uniquely related to specific aspects of health behaviors. Understanding such associations helps advance our understanding of the dynamics of stress responses, of health behavior enactment in everyday life, and can form the basis for interventions that are dynamically tailored to promote specific health behaviors.

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Symposium 1C

THE SOBC MEASURES REPOSITORY: AN ONLINE SEARCHABLE HOME FOR DOWNLOADING MEASURES OF BEHAVIOR CHANGE MECHANISMS

Donald Edmondson, PhD, MPH

Supported by the National Institutes of Health (NIH) Common Fund, the Science of Behavior Change (SOBC) program seeks to improve the understanding of mechanisms underlying human behavior change by applying an experimental medicine approach to behavior change research. By using this common method, SOBC researchers aim to reveal how and why people make and sustain healthy behaviors, which will inform the development of more reliable, efficient, and effective behavioral interventions. This presentation will describe the experimental medicine approach, and introduce a new resource for behavior change researchers.

This August, SOBC launched an internet-based measures repository where researchers can learn about and download measures of key behavior change mechanisms. This repository on the SOBC website is a unique resource that offers a way to advance, and engage with, behavior science research tools that have been tested using the experimental medicine approach to identifying mechanisms of behavior change.

Research funded during stage one of SOBC (2009–14) identified three broad classes of intervention targets that are highly relevant to the mechanisms underlying behavior change: self-regulation; stress reactivity and stress resilience; and interpersonal and social processes. This aided the development of a reliable and valid way to measure engaged targets through experimental manipulation or interventions. This measurement focus has been the foundation for the current stage two phase of the SOBC Research Network (2015–present).

Initial findings from stage one have informed the population of the SOBC measures repository. An essential and unique feature of the repository is the documentation of a measure's status through the three steps of the SOBC experimental medicine approach: (1) Identify, (2) measure, and (3) influence. First, researchers identify a hypothesized mechanism that drives behavior change. Next, they develop valid measures of the target mechanism. Researchers then influence the target mechanism with experimental methods. Measures are ultimately validated or not validated based on whether a change in a measure relates to a change in behavior.

This presentation will walk attendees through the measures repository, and highlight its value for the field.

Symposium 2

8:00 AM-9:15 AM

UNPACKING SEDENTARY BEHAVIOR REDUCTION: INTERVENTION APPROACHES AND OUTCOMES IN POPULATIONS WITH CHRONIC CONDITIONS

Dori E. Rosenberg, PhD, MPH¹, Laura Ellingson, PhD², Dale S. Bond, PhD³, Lucas Carr, PhD⁴

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There has been rapid development of interventions to reduce sedentary behaviors as the epidemiologic evidence has grown to suggest that sedentary time is associated with health detriments. Populations who are less likely to meet physical activity guidelines (e.g. older adults, people with obesity) could be particular candidates for interventions to reduce sedentary time as they may have difficulty engaging in moderate-to-vigorous physical activity. However, strategies for reducing sedentary behavior (defined as activities done while sitting or reclining at low energy expenditures) can focus on many different target behaviors. Approaches include targeting increases in bouts of standing time, breaks from sitting, and light intensity physical activity. Populations may vary in which of these approaches best fits their lifestyle. The presentations in this session will present results of experimental studies seeking to uncover the effectiveness and feasibility of different approaches to reducing sedentary time. Presentations will describe the strategies used to create the desired changes in sedentary behaviors and the behavioral outcomes of the interventions. The discussant, Dr. Lucas Carr, will provide a synthesis of the findings presented and make suggestions for future research on sedentary behavior reduction in populations with chronic conditions.

Symposium 2A

HOW DOES A SITTING REDUCTION INTERVENTION ALTER SEDENTARY, STANDING, AND ACTIVE TIME IN OLDER ADULTS WITH OBESITY?

Dr. Dori E. Rosenberg, PhD, MPH

Background: While studies suggest that reducing sedentary time among older adults is feasible, there is little data on which aspects and patterns of behavior change with sedentary time reduction. We aimed to examine how an intervention to reduce sedentary time alters various aspects of sedentary and physical activities. The study targeted older adults with obesity, a population at high risk for low physical activity and high sedentary time for whom alternative health-promoting strategies are needed.

Methods: We conducted a randomized controlled pilot trial (N = 60; mean age = 67, mean BMI = 36). Intervention participants (termed I-STAND; N = 29) received a Jawbone UP band to prompt breaks from sitting, feedback on sitting time from wearing an activPAL device, educational materials, and 6 brief health coaching sessions over 12 weeks. Control participants (N = 31) received healthy living information through a self-study program. Outcomes were assessed with the activPAL device worn for 7 days at baseline and at 12 weeks and included mean wake time spent: sitting, standing, engaging in prolonged bouts of sitting for 30 minutes or more, taking breaks from sitting, and stepping. We also examined average daily step counts. Linear regression models adjusted for baseline measures were conducted.

Results: I-STAND participants had decreases in sitting time (-70 mins/day), increases in standing time (+51 mins/day), and reductions in prolonged sitting bouts (-2.5/day) compared to controls (+7 mins/day sitting, -3 mins/day standing, +0.1 prolonged bouts; all p's < .01). There were no significant changes in breaks from sitting, stepping time, or steps.

Conclusions: Older adults with obesity are able to reduce their sitting time. Sitting time was primarily displaced with increases in standing time. Additionally, prolonged bouts of sitting were significantly reduced. However, sitting reduction did not impact sitting breaks and physical activity. Our approach can inform future interventions seeking to relate changes in sitting patterns with health outcomes.

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Symposium 2B

USING FITNESS TRACKERS TO IMPROVE ACTIVE AND SEDENTARY BEHAVIORS AND SYMPTOMS IN PATIENTS WITH CHRONIC LOW BACK PAIN

Dr. Laura Ellingson, PhD

Background: Chronic low back pain (CLBP) is a debilitating condition experienced by more than 10% of the US population. Evidence demonstrates that increasing physical activity (PA) is one of the few efficacious treatments for CLBP. However, patients with CLBP have high sedentary time (ST) and encouraging PA is challenging. Wearable fitness trackers have shown promise for improving PA in patient populations, but their effectiveness in CP patients is largely unexplored.

Methods: Patients with CLBP (N=57; mean age: 43.5) were randomly assigned to receive a Fitbit Charge alone (FB; N=17) or in combination with motivational interviewing (FBMI; N=19) or a waitlist control condition (WLC; N=21) for three months. Patients receiving Fitbits were encouraged to utilize them as they saw fit to “move more and sit less”, and received monthly calls to address any issues with the trackers. Those receiving MI additionally had three sessions (1 in-person, 2 via phone) with a trained health coach to discuss motivation for change and self-selected behavioral goals. PA, ST, and symptoms were assessed at baseline and 3-months using the ActiGraph, activPAL, and validated questionnaires (SF-36, SF-MPQ, CLBP Minimal Dataset). Changes in all outcomes were examined using 3 (groups) x 2 (time points) repeated measures ANOVA and effect size calculations (Cohen’s d).

Results: Results showed a trend towards a group by time interaction for ST ($p=0.06$; $d=0.61$) and light PA ($p=0.07$; $d=0.60$). Participants in FB and FBMI groups showed small decreases in ST (16.5 mins/day) and increases in light PA (13.5 mins/day), while WLC participants had increases in ST (43.5 mins/day) and decreases in light PA (40.7 mins/day). Time spent in higher intensity PA remained stable over the intervention ($p>0.05$). Across groups, pain symptoms significantly improved over the trial (p)

Conclusions: Wearable trackers show promise for positively influencing PA and ST patterns in patients with chronic pain. Decreasing ST and increasing light PA improved pain symptoms in the absence of changes in higher intensity PA and could be a viable target for future interventions in this population.

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Symposium 2C

A JITAI APPROACH TO BREAKING UP PROLONGED SEDENTARY BEHAVIOR WITH LIGHT-INTENSITY WALKING IN ADULTS TREATED FOR OBESITY AND CARDIOVASCULAR DISEASE

Dale S. Bond, PhD

BACKGROUND: Individuals with obesity and/or cardiovascular disease perform high levels of sedentary behavior (SB), which hinders total physical activity (PA) participation. Interrupting and replacing SB with PA is challenging. As SB is highly habitual, involves minimal awareness, occurs frequently, and is more reinforcing than PA, the vigilance, motivation, and effort necessary to monitor, interrupt, and replace SB can exceed available energy, time and resources. We developed and pilot-tested a mobile Just-in-Time Adaptive Intervention (JITAI) that automatically monitors SB/PA and intervenes only when it is likely to have the greatest health impact to avoid participant fatigue and frustration with self-monitoring or receiving interventions at irrelevant times or locations.

METHODS: We pilot-tested our JITAI in 2 studies. In Study 1, adults with obesity ($n=30$) were randomized to 3 conditions each lasting 7 d involving smartphone prompts for walking breaks of (1) 3-min after 30 SB min; (2) 6-min after 60 SB min; and (3) 12-min after 120 SB min. Study 2 randomized cardiac rehabilitation (CR) patients ($n=16$) to CR+JITAI (smartphone prompts for walking breaks of 6-min after 60 SB min and increasing bouted moderate walking to 30 min/d) or CR only. Participants’ SB and PA were measured via the SenseWear Armband monitor for 7 d at baseline and after each of the 3 conditions (Study 1) or 12-week post-intervention (Study 2). Within- and between-subject changes in % time spent in SB and PA were compared.

RESULTS: In Study 1, all 3 conditions decreased % time in SB and increased % LPA relative to baseline ($ps<.005$). The 3-min condition was superior to the 12-min condition for decreasing SB and increasing LPA ($ps<.05$). In Study 2, CR+JITAI produced improvements in % SB time (-2.3% vs. +6.5%) and bouted moderate-to-vigorous PA (MVPA: +13.3 vs. 4.1 min/d) that were clinically (but not statistically) significant and of a medium effect size (Cohen’s $d=.54$ and $.69$).

CONCLUSIONS: For individuals with chronic conditions at high risk for excessive SB, this JITAI offers a promising strategy to 1) facilitate adherence to SB change via individual tailoring and minimizing burden, and 2) effectively break up prolonged SB with brief light-intensity PA.

Symposium 3

8:00 AM-9:15 AM

INCREASING OUR IMPACT: HOW 3 SBM MEMBERS DEVELOPED AND DISSEMINATED HIGH IMPACT HEALTH POLICY BRIEFS

Joanna Buscemi, Ph.D.¹, Akilah Dulin-Keita, PhD², Tracy Trevorrow, Ph.D.³, Alicia Kaye Matthews, Illinois⁴, Marian L. Fitzgibbon, IL⁴

¹DePaul University, Chicago, IL; ²Brown University School of Public Health, Providence, RI; ³Chaminade University, Honolulu, HI; ⁴University of Illinois at Chicago, Chicago, IL

The Society of Behavioral Medicine’s (SBM’s) Health Policy Committee (HPC) provides structured and guided opportunities for SBM members and SBM special interest groups (SIGs) to increase the impact of their work through the development and dissemination of health policy briefs. The purpose of this symposium is to 1) present four of the health policy briefs that have been developed in the past year and 2) provide members with “lessons learned” and tips for writing and disseminating the briefs. First, Dr. Akilah Dulin-Keita will discuss two health policy brief related to diet and disease prevention. The first highlights the importance of sugary drink taxes and the second focuses on increasing funding for fruit and vegetable production in the reauthorization of the Farm Bill. Dr. Trevorrow will then describe a health policy brief about the importance of later school start times on student health and learning. Next, Dr. Matthews will describe a brief focused on supporting policies to reduce smoking disparities for sexual and gender minorities. The discussant and Chair of the Health Policy Committee, Dr. Joanna Buscemi, will close with remarks on key strategies for developing authorship teams, engaging organizational partners, and increasing the reach of briefs through broad dissemination. Dr. Marian Fitzgibbon, Chair of the Health Policy Council, will serve as Chair for the symposium.

Symposium 3A

PREVENTING CHRONIC DISEASE THROUGH POLICY: SUPPORTING SUGARY DRINK TAXES AND FRUIT/VEGETABLE PRODUCTION IN THE FARM BILL

Dr. Akilah Dulin-Keita, PhD

Objective: Present SBM's policy briefs advocating for improved dietary quality (i.e., sugar sweetened beverage excise tax and increasing fruit and vegetable production and intake in The Farm Bill reauthorization) and provide an overview of "lessons" from writing these briefs.

Background: In the United States (U.S.), poor dietary quality is a significant public health problem. Despite a recent decline, sugar intake still exceeds federal recommendations. Sugar sweetened beverages (SSBs) are the largest source of added sugars and account for almost half of added sugars consumed. Consumption of SSBs increases risks for chronic diseases such as obesity, type 2 diabetes, coronary heart disease, and fatty liver disease. Inadequate fruit and vegetable (FV) intake is also of great concern. Low FV intake is associated with cardiovascular disease, stroke, and some forms of cancer; and with all-cause mortality. In 2013, approximately 12% to 17% of all deaths in 2013 were attributable to inadequate FV intake. However, analysis of the U.S. Department of Agriculture's databases indicate that the availability of FV in the food supply are at half or less than half of what is needed to meet federal dietary recommendations. In response to the mounting research evidence that suggests a causal link between poor diet quality and chronic diseases, policy makers in some countries and U.S. states have implemented taxes on SSBs and some FV programs. *While the aforementioned policies and programs are promising, we must create and support national policies that prioritize SSB taxes and increase FV production and intake.*

Approach: We will present an overview of the sugar sweetened beverage policy brief and The Farm Bill policy brief. We will describe how we worked with the Health Policy Committee to identify authors who are SBM members and non-members. The authorship teams used an iterative process to arrive at the final drafts of the policy briefs. The presentation will review the process of conceptualizing ideas, arriving at suggestions for tax implementation, and countering beverage industry arguments with available evidence. With regard to The Farm Bill, we will also describe summarizing complex ideas in a meaningful way and how we introduced potentially controversial ideas tactfully. We will also describe the process for engaging stakeholders (both internal and external to SBM) and will discuss how we leveraged existing evidence to arrive at our policy recommendations.

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Symposium 3B

STARTING SECONDARY SCHOOLS AT 8:30 A.M. OR LATER PROMOTES STUDENT HEALTH AND LEARNING

Dr. Tracy Trevorrow, Ph.D.

Objective: To present SBM's policy statement advocating for later start times for secondary schools to promote health and learning and share the lessons learned in its development.

Background: As a consequence of puberty, teenage students are biologically driven to have later sleep and wake-up times than younger children. Most secondary schools in the US start too early to accommodate for this shift in sleep patterns resulting in inadequate sleep, psychological and physical health problems, and reduce students' ability to learn. Barriers to later school start times include conflicts with after school programs, staff and teacher schedules, and school busing costs. Schools that have delayed start times have not reported significant problems with their new schedules and have shown improvements in students' sleep, daytime alertness, academic achievement, school attendance, and driving safety. Educators should adopt a policy that ensures secondary schools start at 8:30 a.m. or later. This standard has been advocated by numerous professional organizations. A systematic and nationwide delay in start times for secondary schools can be accomplished by lobbying members of school boards, state departments and legislators, and providing healthy sleep education campaigns to educators, school counselors, students and their families.

Approach: We will provide an overview of the significance of school start times on students' health and learning and how our school start time position statement was developed. We will share lessons learned regarding writing a brief lobbying document as well as a more detailed statement for journal publication. Frequent consultations with SBM leaders were required to appreciate the structure and voice of these documents and the many steps of review. We found it challenging to adopt an advocacy voice which contrasts with our typical approach to scholarly writing. We sought advice from multiple sources and integrated feedback over multiple iterations. As scientists and clinicians we were unaccustomed to developing specific strategies which would result in policy changes. Doing this may be our greatest contribution to this issue as specific action plans appear lacking in other position statements addressing school start times.

Symposium 3C

REDUCING SMOKING DISPARITIES FOR SEXUAL AND GENDER MINORITIES

Dr. Alicia Kaye. Matthews, Illinois

Background: Smoking remains the leading preventable cause of death and disease in the United States, and each year more than 480,000 people die prematurely from smoking or secondhand smoke exposure. Sexual and gender minorities are at elevated risk for tobacco-related death and disease due to disproportionately high rates of tobacco use. The reasons for this difference likely stem from discrimination, stigma, targeted marketing by the industry, and normalization of tobacco in community spaces and organizations. Despite these disparities, gender and sexual minorities are not systematically included in tobacco prevention and control efforts. Little is known about if evidence-based tobacco control interventions improve or exacerbate disparities for sexual and gender minority populations. National recognition of the problem exists and in the Fall of 2016, the National Institutes of Health (NIH) designated the LGBT community as a health disparity population. These combined factors underscore the importance of advocating for the inclusion of sexual and gender minority persons in tobacco prevention and control efforts now. Specifically, we must support the inclusion of gender and sexual minorities (e.g., people identifying as lesbian, gay, bisexual, and transgender [LGBT]) in all local, state, and national tobacco prevention and control activities including surveillance of tobacco use and cessation activities, targeted outreach and awareness campaigns, increasing access to culturally appropriate tobacco use dependence treatments, and restricting disproportionate marketing to LGBT communities by the tobacco industry, especially for mentholated tobacco products.

Approach: We will provide an overview of smoking related disparities based on sexual orientation and gender identity and the implications for smoking cessation research and policy following the NIH designation of LGBT as a health disparity population. Next we will provide an overview of the LGBT smoking disparities policy brief and key recommendations. We will discuss the process of engaging stakeholders from across multiple stakeholder groups including smoking cessation researchers, national advocacy groups, grass-roots organizations, health care providers and professional organizations, and policy groups; the process of conceptualizing the multi-factorial approaches required to address the problem; and the use of traditional and emerging outlets for dissemination processes.

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Symposium 4

8:00 AM-9:15 AM

TRANSLATING EVIDENCE-BASED BEHAVIOR CHANGE INTERVENTIONS INTO MOBILE APPLICATIONS

Ellen Beckjord, PhD, MPH¹, Amber Blackwood, MPH, CHES², Elaine Fath, MA³, Sherry Pagoto, PhD⁴

¹UPMC, Pittsburgh, PA; ²UPMC Health Plan, Pittsburgh, PA; ³Schell Games, Pittsburgh, PA; ⁴University of Connecticut, Storrs, CT

A behavioral scientist, a game designer, and a health coach walk into a bar... or, in our case, into a white board-lined conference room, joined by experience designers, health educators, and systems analysts, and after 19 months of focused work, translated three workbook-based behavior change interventions into mobile applications that function as just-in-time adaptive interventions (JITAs). In this symposium, we will describe the process we used for creating stress management, weight management, and smoking cessation JITAs, including what worked well and what challenges we encountered. Our first presentation will detail the codesign methods used to foster creative thinking within the group, to level the playing field for professionals from different disciplines, and to enable broad participation in decision making while respecting the subject matter expertise of each participant. Next, we will discuss how health behavior theory was used to guide the selection of functional capabilities for the delivery of intervention content. Our Discussant will consider this process in the context of the broader field of digital health; offer her perspective on what makes for the successful translation of evidence-based behavior change interventions into digital assets; and discuss how behavioral medicine professionals can leverage specific processes and collaborations in the service of scaling their interventions via digital health.

Symposium 4A

HOW BEHAVIORAL THEORY GOT ITS GROOVE BACK: GAME DESIGN MEETS BEHAVIORAL CONSTRUCTS IN THE CODESIGN OF A MOBILE BEHAVIOR CHANGE APP

Amber Blackwood, MPH, CHES

Is there a place for the traditional behavioral change theories that we know and love in a new age of sexy and innovative digital health technology? We think the answer is yes. Our team of health coaches, public health practitioners, behavioral scientists, and game designers developed an interactive digital habitat where a user can work their way through a journey of lifestyle transformation, picking up lessons and tools along the way. Each feature they encounter is laden with core constructs from health behavior theories disguised as just another engaging element of a transformational game. We will reflect on how both behavioral theory and the iterative process used to generate content influenced the development of content delivery vehicles within the app. We will also review how we used a diverse blend of chatbots, tailored feedback, wizards, and just-in-time-adaptive-interventions (JITAI) to model behavior, prompt reflection, set goals, and build self-efficacy. We will cover the insights gleaned from ongoing user testing and how they continuously informed edits to past content as well as the direction of future content generation. Our development of three engaging, evidence-based mobile behavior change apps illustrates the value of collaborative industry partnerships in harnessing related expertise in a creative and complimentary way. When considering ways to extend the reach of current behavioral change programs with digital technology, industry partnerships should be leveraged to optimize engagement.

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Symposium 4B

THE CODESIGNER'S TOYBOX: USING A BROAD RANGE OF TOOLS FROM MULTIPLE DISCIPLINES TO HELP DIVERSE TEAMS COLLABORATE CREATIVELY

Elaine Fath, MA

If you're involved with app development, you're working with a diverse set of experts with very different schemas; ways of talking about problems; with their own way of creating work, generating ideas, and making decisions. It can sometimes feel difficult or impossible to keep everyone on the same page and excited about what is being created. The concept of iterative, collaborative design across disciplines exists in Education, User Experience Design, Game Design, Service Design, Codesign, and numerous other disciplines. And yet, because the vocabulary for describing this practice can vary so widely from field to field, it can be hard to know the breadth of tools and methods at a multidisciplinary team's disposal when preparing to codesign. This presentation will describe codesign methods used for creating a series of just-in-time adaptive interventions for health behavior change. We used a blend of methods from different disciplines and have emerged from the process with a list of "do's" and "don'ts" for teams attempting to foster creative co-development and shared participation of design in multidisciplinary teams. We will discuss suggestions for getting everyone generating and participating in active meetings, developing a shared language between teams, avoiding "design by committee," developing a clear shared understanding of a design, as well as common pitfalls that emerge when designing with a multidisciplinary group and how to mitigate. Participants will walk away with a sense of what to try and what to avoid, along with a set of references and resources from disciplines as broad as Education and Game Design in order to delve deeper into how to prepare for their own active codesign meetings that respect the expertise of each participant while allowing for broad participation in the decision-making and design process.

Symposium 5

8:00 AM-9:15 AM

FEASIBILITY OF EHEALTH AND MHEALTH APPROACHES FOR CANCER CARE AND SURVIVORSHIP

Lisa M. Quintiliani, PhD¹, Jennifer Huberty, PhD², Cynthia C. Forbes, PhD³, Elizabeth J. Lyons, PhD, MPH⁴

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Advances in detection and treatment of cancer have led to an increasingly large cohort of survivors. Modification of health behaviors and addressing symptom control and other psychosocial supportive care needs has the potential to increase quality of life, prevent future cancer recurrence and increase long-term health among cancer survivors. However, translating these recommendations into population-wide, inexpensive, sustainable programs for cancer survivors has, to date, proven largely unrealized. There is great promise of mobile health (mHealth) and electronic health (eHealth) tools that are mobile, simple, and embedded into daily life routines. This symposium presents innovative research of three separate studies in early stages that are focused on examining the feasibility of approaches for health promotion among multiple cohorts of cancer survivors using mHealth and eHealth strategies. We will present baseline data and preliminary results; each will describe the mHealth or eHealth strategy used, the rationale for selecting each cancer survivor population targeted, study design, and preliminary evidence of feasibility. Investigators will also detail how they would refine their studies in the future to take advantage of new or emerging technologies. Dr. Lisa Quintiliani will present qualitative data collected using a modified Delphi approach from a cohort of breast cancer survivors from underserved populations describing which features (based on the behavior change technique taxonomy) of a mHealth app would be important to them. Dr. Jennifer Huberty will describe the results of two feasibility trials of home-based on-line yoga for patients with myeloproliferative neoplasms. Dr. Cynthia Forbes will present a review of feasibility, acceptability, and efficacy of online supportive care interventions targeting prostate cancer survivors. We will close with a discussion, Dr. Elizabeth Lyons who will comment on the commonalities and differences among the studies with implications for use of mHealth and eHealth strategies in future studies among cancer survivors.

Symposium 5A

DEVELOPMENT OF AN MHEALTH APP FOR WEIGHT MANAGEMENT AMONG BREAST CANCER SURVIVORS FROM UNDERSERVED POPULATIONS

Dr. Lisa M. Quintiliani, PhD

Background: Advances in detection and treatment of breast cancer has led to a large cohort of cancer survivors who may have an increased awareness of health promotion; mobile health (mHealth) technologies have the potential to deliver effective behavioral interventions in a format suited to everyday life. Ownership of smartphones is now 77%, with similar ownership rates between gender and racial/ethnic groups. However, the features that should be included in mHealth interventions for cancer survivors have not been well specified, particularly among those from low income or racial/ethnic minority groups. Therefore, the objective of this study is to identify evidenced-based features that breast cancer survivors from underserved populations would find important to include in a mHealth application (app) to improve weight management.

Methods: We examined the systematic review by Hoedjes and colleagues and identified 19 techniques from the Behavior Change Technique (BCT) Taxonomy version 1 that were present 2 or more times in interventions shown to be effective in weight-related trials among cancer survivors. We then developed a presentation that depicted each BCT along with accompanying pictures depicting how each could be incorporated into a mHealth app. Next, female breast cancer survivors were recruited from a large safety net hospital to participate in a focus group. During the group, participants were shown the BCT presentation and asked to rate how important each feature would be from 1 (not at all important) to 9 (very important). Using a modified Delphi method, each participant was then asked to re-rate the features after seeing their own rating compared to the group rating. Participants also answered open-ended questions about their perceptions of mHealth apps.

Results: Seven women participated in 1 of 2 focus groups. Mean age was 60 years; the majority received public health insurance and were African American or Black (85% for both). All were overweight or obese. Scores ranged from 5–9 for all features. Most did not change their ratings after being shown the group ratings. Lower rated features included the need for specifying credible sources; higher rated features included demonstration on how to perform behavior (e.g., stretching exercises). Participants valued apps that are easy to navigate, tailored to their habits, and convenient to use on their schedule.

Conclusion: Breast cancer survivors from underserved populations were able to identify important features to include in a mHealth app and to elaborate on preferred app design characteristics. Future research will involve additional focus groups and the development of a mHealth app for usability testing among the same population, ultimately resulting in a mHealth app ready for efficacy testing in a larger trial.

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Symposium 5B

FEASIBILITY OF ONLINE YOGA FOR MYELOPROLIFERATIVE NEOPLASM PATIENTS: COMBINED DATA FROM MULTIPLE STUDIES

Jennifer Huberty, PhD

Introduction: Myeloproliferative neoplasms (MPNs) are a hematological cancer with a chronic symptom burden not entirely resolved with current medical therapy. Fatigue is the most common contributor to a reduced quality of life (QoL) experienced by up to 84% of MPN patients. Yoga successfully improves fatigue and QoL in other cancer patients. Here we present the combined feasibility data for two home-based online yoga studies in MPN patients.

Methods: An online yoga feasibility study was completed in 2016 and a pilot study in 2017. The methods described herein were the same for both studies. MPN patients were recruited nationally via internet-based strategies. Participants enrolled in a 12-week (60 min/wk) online yoga intervention and completed self-report questionnaires assessing symptom burden at baseline (wk 0), mid-point (wk 7), post-intervention (wk 12), and follow-up (wk 16). Satisfaction was measured post-intervention. Weekly participation was tracked objectively using an online web analytics software. Feasibility was defined as: (a) *acceptability*: >70% satisfied with online yoga and >70% intent to continue participating in yoga, (b) *demand*: >70% completed 42 min/wk of yoga (70% of prescribed minutes), and (c) *practicality*: >70% completed questionnaires. Pilot study participants received a blood draw at baseline and post-intervention from a certified phlebotomist at a Quest Diagnostics Patient Center. Feasibility (i.e., acceptability) of the blood draw was defined as ≥70% completion rate at both time points.

Results: Across both studies, 504 MPN patients completed eligibility, 89 completed an informed consent, 24 dropped out, and 65 completed the intervention. *Acceptability*: A total of 74% participants were satisfied/very satisfied and 53% were likely/very likely to continue participating in online yoga. *Demand*: Yoga participation averaged ~42 min/week across the 12-wk study, with 20% (n=13/65) averaging ≥60 min/wk (≥100% prescribed minutes) and 43% (n=29/65) averaging ≥42 min/wk (70% of prescribed minutes). *Practicality*: A total of 100% of baseline, 86% of mid-point, 78% of post-intervention, and 72% of follow-up questionnaires were completed. In the pilot study, ~93% of blood draws were completed at baseline and ~71% at post-intervention.

Conclusion: Both online yoga and remote blood draws are feasible in MPN patients. Future RCTs are needed to examine the efficacy of online yoga and to determine the effects that online yoga has on blood biomarkers.

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Symposium 5C

A SYSTEMATIC REVIEW OF FEASIBILITY, ACCEPTABILITY, AND EFFICACY OF ONLINE SUPPORTIVE CARE INTERVENTIONS FOR PROSTATE CANCER

Dr. Cynthia C. Forbes, PhD

Background: A large proportion of men with prostate cancer have functional and psychosocial supportive care needs; many of which are going unmet. Men appear to approve of supportive care interventions but are reluctant to take part in face-to-face, one-on-one, or group counselling sessions. It has been suggested that utilizing online delivery may help circumvent this barrier. This review aims to examine the feasibility, acceptability, and efficacy of online supportive care interventions targeting prostate cancer survivors (PCS).

Methods: Studies were primarily identified through a structured search of the following databases: PubMed, Embase and PsycINFO, in addition to forward and backward citation searches. Studies were eligible for inclusion if they: 1) examined feasibility, acceptability, or efficacy of an online intervention designed to improve supportive care outcomes for PCS as a major part of the study; 2) presented outcome data collected from PCS separately (if mixed cancer groups); and, 3) evaluated efficacy outcomes using a randomized trial design or feasibility/acceptability using a single-arm or randomized trial design. Two authors reviewed abstracts and extracted data; four authors performed methodological reviews.

Results: 16 studies met inclusion criteria. Overall, 2441 men (average age 64 years) were included in this review. Seven studies were classified as randomized controlled trials (RCTs); though, three of these were small pilot RCTs designed to test feasibility, acceptability, and preliminary efficacy of the intervention. Studies reported on the following outcomes: feasibility and acceptability of an online intervention (e.g. patient support, online medical record or follow-ups, or decision aids); reducing decisional conflict or distress; improving cancer-related distress and health-related quality of life; and satisfaction with cancer care.

Conclusion: There appears to be good preliminary evidence for online supportive care among PCS, but not much high level evidence yet. Overall, the sample sizes are relatively small and not representative. Further, inadequate acceptability measures in most studies made it difficult to determine actual PCS acceptability and satisfaction, and lack of a control group precluded strong conclusions regarding efficacy. Translation also appears minimal, with few interventions made publically available post evaluation. Larger trials with appropriate control groups and greater emphasis on translation of effective interventions is recommended.

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Symposium 6

8:00 AM-9:15 AM

PROCESSES, OUTCOMES, AND PRODUCTS TO MAKE DESIGNING FOR DISSEMINATION POP!

Amy G. Huebschmann, MD, MS¹, Phoutdavone Phimphasone-Brady, PhD², Bethany M. Kwan, PhD, MSPH¹, Jodi Summers. Holtrop, PhD¹, Natalia Loskutova, MD, PhD³, Borsika Rabin, M.P.H., Ph.D., Pharm. D.⁴

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Experts estimate it takes an average of 17 years for only 14% of all evidence-based studies to be translated into clinical practice. To expand the reach of behavioral medicine, it is critical for researchers to begin with the end-goal of dissemination in mind. For these reasons, dissemination and implementation (D&I) researchers have begun developing frameworks to measure the different facets required to Design for Dissemination (D4D). These D4D facets may be organized conceptually as Processes, Outcomes, and Products (POP). D4D processes include engaging a range of relevant stakeholders from beginning to end of a project and identifying relevant models and communications channels for dissemination. D4D outcomes include assessments of readiness for dissemination such as pragmatic outcome measures and data on impact and cost that may convey return on investment information to future adopters of the program, as well as measures of actual dissemination to other systems and settings. D4D products include dissemination toolkits and dissemination strategies. This symposium will highlight the different roles of D4D processes, outcomes, and products across studies that represent a range of D4D stages—from early formative stakeholder engagement work for cultural tailoring to the lessons learned from a large-scale dissemination. The first presenter will compare and contrast the D4D Processes of stakeholder engagement with standard community-based participatory research approaches in her work to culturally adapt an evidence-based weight loss program for a population of Latino women with binge eating disorder. The second presenter will present D4D POP examples from an observational study of primary care practices utilizing care management, including a D4D Product: a guide on how to successfully integrate care managers into practices. The third presenter will present D4D POP examples from a study developing mobile health applications for patients and practices use to identify resources tailored to patients, including a D4D product of specific messaging that resonates with patients and clinical providers. The fourth presenter will present D4D POP examples from a large-scale dissemination program that distributed dementia toolkits for family practice clinicians across the United States. Our discussant will identify themes across studies and elaborate on the future potential and challenges of the D4D field.

Symposium 6A

MAKE IT COUNT TWICE: STAKEHOLDER ENGAGEMENT TO INFORM CULTURAL ADAPTATIONS AND IDENTIFY IMPLEMENTATION STRATEGIES

Dr. Phoutdavone Pimphasone-Brady, PhD

Background: Despite national efforts to disseminate effective weight management interventions to reduce the high prevalence of obesity, such interventions are not broadly implemented and disseminated among Latina women with binge eating disorder (BED), a subgroup of Latinas who are less likely to seek treatment for BED. Innovative strategies within the community are needed in order to engage this vulnerable subgroup. The objectives of this study were to interview Latinas with BED (i.e., key stakeholders), in order to learn how to culturally adapt an evidence-based behavioral weight loss (BWL) program and to determine successful strategies to implement this program in the future with community health advisors.

Methods: To effectively reach Latinas with BED, several strategies were used, including building long-term relationships with two community organizations that serve Latino families. Participants who met inclusion criteria were invited to focus groups and interviews to suggest how to culturally adapt an evidence-based BWL program. Qualitative analysis by the constant comparative method identified surface and deep level themes.

Results: Our community relational strategies yielded interviews with 20 Latinas with BED (*Age* = 30 ± 9.87 years, *Body Mass Index* = 34.40 ± 6.64 Kg/m², *Binge eating episodes/month* = 4 ± 4.92 [data shown as mean ± SD]) who provided input on the program's acceptability and sustainability. Surface level themes to improve program acceptability were: reduce overly repetitive lesson content, deliver health information with culturally relevant examples, and organize self-monitoring forms to improve ease of use. Deep level themes to address program sustainability were: 1) present shared cross-cultural health-related values, 2) discuss Latina health beliefs and expectations, and 3) emphasize the influence of individual's contextual factors that influence treatment engagement and success. Also, eight of the twenty participants recruited (40%) were previously trained as community health advisors and recommended avenues for future program dissemination (e.g., community health clinics).

Conclusion: Our findings illustrate the benefit of developing ongoing relationships with community organizations, in order to engage with key stakeholders who can improve interventions' acceptability and sustainability for culturally distinct groups. When designing for dissemination, stakeholder engagement from project beginning to end is critically important.

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Symposium 6B

USER-CENTERED DESIGN OF A DIGITAL BEHAVIORAL HEALTH RESOURCE MATCHING APPLICATION

Dr. Bethany M. Kwan, PhD, MSPH

Background: Many patients with behavioral health needs benefit from community resources outside of the clinic environment. A digital application ("app") could help patients and their care teams identify appropriate, accessible behavioral health resources in their community. To ensure the app has the potential for wide-scale dissemination and reach, it must first be adopted by end-users. Developing with end-users in mind improves adoption rates. Potential end-users include patients with behavioral health needs, family members, care team members including patient navigators, and resource representatives. We used a user-centered design (UCD) process to identify app features end-users would endorse as valuable, engaging, and likely to be disseminated.

Methods: A phased approach to UCD included: a) initial engagement of patients with behavioral health needs and clinicians to identify the scope of resource needs, b) wireframe and iterative prototype development, and c) prototype demonstration and interviews with 22 representative end-users (patients, clinicians, social workers). Through participation in the National Institutes of Health Innovation Corps (iCorps) program, we formulated a business model that specified value propositions, dissemination channels, customer segments, revenue streams, and cost structures.

Results: UCD informed design and development of a functional prototype that end users endorsed as important, innovative, and useful. A social worker noted the app was "wildly helpful, wildly appropriate, and needed." The value proposition for patients was summarized as, "This app helps find the right health and wellness resources for you – faster than a web search!" The value proposition for clinicians was, "This app helps empower your patients to change behavior, meet social needs, saving time for limited care management resources to work with high-need patients." For resources, the value proposition was, "This tool finds qualified and motivated customers, resulting in more revenue and visibility for your organization." Dissemination channels identified include direct marketing to health systems, payers, and resources.

Conclusion: End-user engagement and iterative development methods are key steps in the UCD process. Value propositions and business models are key products of digital health tools designed for dissemination. Future work includes testing the app for usability, effectiveness, and likelihood of dissemination.

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Symposium 6C

CARE MANAGEMENT IMPLEMENTATION: SETTING IT UP MATTERS IN HOW IT WORKS

Dr. Jodi Summers, Holtrop, PhD

Background: Due to the increasing prevalence of chronic disease, care management of patients with these conditions is becoming increasingly common in primary care practice. Care management is a patient-centered approach to “assist patients and their support systems in managing medical conditions more effectively,” and includes patient education, goal setting and self-management support. The objective of this study was to examine models of care management delivery and identify differential features to successful implementation.

Methods: Descriptive study using multiple methods including social network analysis (SNA; on data from written questionnaires to all practice members) and qualitative comparative analysis (QCA; on data from practice member interviews and shadowing of care managers). Participants included 24 primary care practices in Michigan (16) and Colorado (8).

Results: Three structures for care management delivery were identified based on the care manager work location and employer: embedded, co-located and off-site. SNA revealed that embedded care managers were both more likely to be in the core of communication within the practice regarding chronic disease management than off-site care managers (42% v. 18% v. 0%; $p=.01$) and have higher in-degree centrality (Median 19 v. 10 v. 0; $p=.002$). In-degree centrality is a value describing the amount to which information flows into one individual. Embedded and some co-located care managers had rich network connections with practice members of all types. A logic model driven two-level QCA revealed that a rich, accurate, shared mental model of care management and buy-in to team-based care should produce high quality well implemented care management (Y) [Coverage = 0.944; Consistency = 0.921]. These factors should in turn result from role changes, physician buy-in, good coordination, and logistical efficiency [Coverage = 0.901; Consistency = 0.801]. Qualitative examination indicate that these factors are more likely to occur in embedded and co-located care management.

Conclusions: How a care management program is structured can have significant implications regarding how much and how well it is used. Based on these findings, a care management implementation guide was developed and disseminated to primary care practices to assist in the early decision-making stages regarding setting up a care management program.

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Symposium 6D

DESIGNING FOR DISSEMINATION TO IMPROVE DEMENTIA MANAGEMENT: STARTING EARLY AND THINKING BIG

Natalia Loskutova, MD, PhD

Background: Despite substantial evidence about the appropriate management of dementia, only 35% of recommended care processes for patients with dementia are delivered in primary care. Several reasons for this gap include: 1. dementia management research interventions have not always addressed the needs of end users – clinicians and patients; 2. funding opportunities for evidence-based dementia care implementation research are limited; 3. deliberate dissemination efforts to relevant end users by researchers are lacking. Addressing these concerns, the American Association of Family Practice (AAFP) National Research Network conducted a mixed methods implementation and dissemination study to develop and broadly disseminate a dementia care toolkit for practices (AAFP Cognitive Care Kit).

Methods: We used a stakeholder engagement process with AAFP members to develop the toolkit content and format (web-based). We developed an intentionally broad dissemination plan at the time of the research proposal development that included: 1. traditional academic dissemination through peer-reviewed publications and conferences; 2. clinical review journal articles targeting non-academic primary care providers; 3. marketing and communications strategies via AAFP communications channels; 4. education sessions during the AAFP annual member conference. The AAFP utilized web analytics and user feedback data to evaluate the reach, of the dissemination plan and to assess end-user engagement with the toolkit.

Findings: To date, the Cognitive Care Kit has been delivered through AAFP marketing strategies and the AAFP member conference. Of national AAFP users who have received the AAFP marketing strategies to date, 9% ($n = 2,399$) have accessed the Cognitive Care Kit, with over half of those who accessed it visiting sections on cognitive evaluation, prevention and/or late-stage dementia management. Also, $n = 1,695$ of the AAFP clinicians at the 2017 AAFP conference attended planned education sessions. The overall user feedback has been positive “The Care Kit seems to be just about right”.

Implications for Designing for Dissemination: Research projects that address important clinical gaps need to deliberately consider development of dissemination plans early in the project development, and should plan broad dissemination opportunities to reach end-users via their preferred communication channels. Additionally, requesting user feedback during the dissemination process may further optimize the dissemination plans.

Symposium 7

8:00 AM-9:15 AM

ASSESSING THE BEHAVIORAL HEALTH NEEDS OF TRANSGENDER AND GENDER NON-CONFORMING INDIVIDUALS

Nadav Antebi-Gruszka, PhD¹, Demetria Cain, MPH, CPH², Michael E. Newcomb, Ph.D.³, Kristi E. Gamarel, PhD⁴

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Transgender and gender nonconforming (TGNC) individuals are disproportionately affected by significant health disparities compared to cisgender (non-transgender) individuals, including higher HIV and STI prevalence rates, higher rates of depression, more alcohol and drug use, and more reported suicide attempts. TGNC are also more likely to be discriminated against when trying to access health services. Experiences of discrimination, along with related social and economic stressors contribute to these health disparities. Yet, research into these factors is limited, culturally appropriate interventions are underdeveloped, and much remains to be done to extend the reach of behavioral health research toward TGNC individuals. This symposium seeks to provide an overview of the unique needs of this vulnerable population by examining several health outcomes in various gender identity subgroups. The first talk will present findings from a U.S. national cohort of transgender men (individuals assigned female at birth whose gender identity or expression is male) who have sex with men, about the prevalence of HIV and bacterial/viral STI testing in this population, and factors associated with this prevalence. The second talk will present on the transgender women (individuals assigned male at birth whose gender identity or expression is female) and the association between transgender stigma, depression, and negative consequences from alcohol and drug use. The third talk compares TGNC youth assigned female at birth with TGNC youth assigned male at birth on depression and suicidality, violence and victimization, and alcohol and drug use. Together, these presentations highlight the importance of examining health disparities among gender minorities and the need for transgender-specific or multilevel interventions. Discussion will be led by a researcher in the field of public health, substance use, and gender minorities, and will focus on the overall implications of this research, goals for future investigation, and intervention development.

Symposium 7A

FACTORS ASSOCIATED WITH HIV AND STI TESTING UPTAKE IN A U.S. NATIONWIDE SAMPLE OF TRANSGENDER MEN WHO HAVE SEX WITH MEN

Dr. Nadav Antebi-Gruszka, PhD

Introduction: HIV and sexually transmitted infection (STI) screening is critical for HIV/STI prevention and care. Transgender men—individuals assigned female at birth whose gender identity or expression is male—report relatively low HIV/STI testing prevalence compared to cisgender (non-transgender) men. Within this population, transgender men who have sex with men (TMSM), and especially those having sex with cisgender men, are at risk of being affected by HIV and bacterial/viral STIs. Yet, research about the prevalence of HIV/STI testing and factors related to lower testing in this population is scarce. To address this gap, we examined the associations between sociodemographic and behavioral indicators and HIV/STI testing (previously identified in the testing literature) in a U.S. national sample of TMSM.

Methods: Using data from a convenience sample of 203 TMSM recruited online, four multivariable logistic regression models were fit for lifetime HIV testing, past year HIV testing, lifetime bacterial STI testing, and lifetime viral STI testing.

Results: The majority of TMSM reported lifetime testing for HIV (72.4%), bacterial STIs (67.5%), and viral STIs (70.9%), and 61.6% of TMSM received HIV screening in the past year. Overall, 49.3% of TMSM reported engaging in HIV transmission risk behavior, defined as condomless vaginal/anal sex with a casual male sexual partner who was of a known discordant or unknown HIV status. Being gay/queer, residing in the South, having fewer than 5 casual male sexual partners (compared to more than 5 partners), and engaging in HIV transmission risk behavior in the past six months were associated with lower lifetime and past year HIV testing prevalence. Furthermore, having fewer than 5 casual male sexual partners was related to lower prevalence of lifetime bacterial STI testing. Lastly, TMSM who were recruited from a social networking website, had 1–4 casual male sexual partners, and had not used drugs in the previous 6 months were less likely to be ever tested for viral STIs.

Conclusions: HIV and STI testing uptake among TMSM was suboptimal, and similar to those found in previous studies with cisgender MSM samples. Efforts to increase HIV/STI testing among TMSM who engaged in condomless sex are warranted. Specialized TMSM-specific services may be needed to extend our reach and increase HIV/STI testing uptake in this vulnerable population.

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Symposium 7B

TRANSGENDER STIGMA, DEPRESSIVE SYMPTOMS, AND NEGATIVE CONSEQUENCES FROM ALCOHOL AND DRUG USE AMONG TRANSGENDER WOMEN

Ms. Demetria Cain, MPH, CPH

Introduction: Research shows that alcohol and substance use is extremely prevalent among LGB individuals relative to their heterosexual counterparts, in particular the negative consequences from use. These health disparities are largely explained through the effects of experiencing stigma, internalizing negative stereotypes, and higher depressive symptomatology. Transgender women (TW) face increased rates of discrimination as gender minorities. Yet, these associations are understudied within this vulnerable population. TW may be experiencing problems from alcohol and drugs use related to coping with social and economic stressors associated with transgender stigma. This study seeks to examine the association between anticipated transgender stigma, internalized transphobia, depression and negative consequences from alcohol and drug use.

Methods: The sample included 212 transgender women in New York City recruited through online and community outreach. We ran descriptives, correlations and a negative binomial regression model to examine factors associated with higher scores on the Short Inventory of Problems-Alcohol and Drugs (SIP-AD).

Results: The mean age was 34 years old with 23% percent reporting heavy drinking and 17% reporting cocaine, crack, ecstasy, GHB/GHL, or methamphetamine use at least once a week in the past 2 months. Mean SIP-AD was 8.25 (SD = 9.71), 20.99 (SD = 11.56) for depressive symptomatology, 15.19 (SD = 4.11) for anticipated transgender stigma, and 20.74 (SD = 6.34) for internalized transphobia. A negative binomial log link regression controlling for race, age, transition age, education, and income found higher depression (ARR = 1.04, $p = .03$) associated with higher SIP-AD. Internalized transphobia was not associated (ARR = 1.02, $p = ns$) with SIP-AD.

Conclusions: Negative consequences from alcohol and drug use are prevalent among TW and associated with depressive symptoms and anticipated transgender stigma, yet not associated with internalized transphobia. TW may not be internalizing negative stereotypes about being a gender minority in ways that impact their health. These findings suggest a need for culturally appropriate interventions to address alcohol and drug use and to extend intervention development beyond the individual to address structural level factors.

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Symposium 7C

PREVALENCE OF HEALTH OUTCOMES AND RELATED BEHAVIORS IN A SAMPLE OF TRANSGENDER AND GENDER-NONCONFORMING YOUTH

Michael E. Newcomb, Ph.D.

Background: An emerging body of literature has documented that transgender and gender-nonconforming (TGNC) individuals experience profound disparities relative to their cisgender peers across various health domains, including depression and suicidality, violence and victimization, and alcohol and drug use. These analyses aimed to examine prevalence of various health outcomes and related behaviors in a diverse sample of TGNC youth, as well as differences in these outcomes based on sex assigned at birth.

Method: Data were collected between 2015 and 2017 as part of two ongoing longitudinal studies of LGBTQ youth in the Chicago area. RADAR is a cohort of LGBTQ youth assigned male at birth ($N = 1047$), and FAB 400 is a cohort of LGBTQ youth assigned female at birth ($N = 438$). These analyses utilized data from the baseline assessment for all participants who identified as TGNC in RADAR ($N = 80$) and FAB 400 ($N = 119$), for a total analytic sample of 199 TGNC youth.

Results: For the sample as a whole, depressive symptoms were common; past 6 month suicidal ideation and suicide planning was reported by 28.1% and 10.6%, respectively. Past 6 month gender identity-based victimization was also common, with the majority of the sample reporting recent verbal or physical harassment. With regard to substance use, 21.1% reported alcohol use in the moderate- to high-risk range for an alcohol use disorder, and 22% reported marijuana use in the same range for risk of a cannabis use disorder. For illicit drugs, 9% reported past 6 month stimulant use, 6.5% reported club drug use, and 11.6% reported use of any other illicit drug. Compared to TGNC youth assigned female at birth, youth assigned male at birth reported more alcohol-related problems ($\beta = 3.17$, $p < .01$), more stimulant use ($OR = 4.54$, $p < .05$), higher levels of victimization ($\beta = 2.07$, $p < .001$), and lower levels of perceived social support ($\beta = -0.59$, $p < .01$). TGNC youth assigned female at birth reported higher levels of depressive symptoms ($\beta = -2.90$, $p < .05$), but those assigned male at birth were more likely to report a previous suicide attempt ($OR = 7.15$, $p < .05$).

Discussion: These analyses provide compelling evidence that TGNC youth are at high risk for various negative health outcomes. TGNC youth assigned male at birth are particularly high risk for substance use problems, violence, and suicide. More work is needed to understand how to mitigate these disparities and promote resilience.

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Symposium 8

8:00 AM-9:15 AM

CULTURE AND PSYCHOSOCIAL RISK FACTORS FOR DIABETES IN LATINOS: FINDINGS OF THE HISPANIC COMMUNITY HEALTH STUDY/STUDY OF LATINOS

Jeffrey S. Gonzalez, PhD¹, Neil Schneiderman, PhD², Maria Llabre, PhD², Jessica McCurley, M.S., M.P.H.³, Gregory A. Talavera, MD, MPH⁴

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Type 2 Diabetes is a major public health concern for the United States and disproportionately affects Hispanics/Latinos. Yet, little research is available on the cultural, psychological and social factors that are involved in explaining risk for diabetes in this population. Even less research has examined the considerable heterogeneity in risk among the various groups of origin that are included in the diverse ethnic category of Hispanic/Latino. The Hispanic Community Health Study/Study of Latinos (HCHS/SOL) is a landmark longitudinal multicenter community-based cohort study that represents the largest and most comprehensive study of Latino health ever undertaken in the United States. Beginning in 2008, 16,415 U.S. Hispanic/Latino adults who self-identified as Cuban, Dominican, Puerto Rican, Mexican, Central American, or South American were recruited from a random sample of households in four communities located in the Bronx, Chicago, Miami, and San Diego. Participants underwent an extensive clinic examination at baseline to determine disease prevalence and to identify potential risk and protective factors. Comprehensive questionnaires on personal and family health, acculturation, health behaviors and other personal characteristics were also collected. Participants were followed regularly by telephone to track important health outcomes and were re-evaluated with a second clinic examination beginning in 2013. This rich dataset provides an opportunity to significantly improve our understanding of diabetes risk in this population. The first presentation in this symposium will focus on the prevalence and incidence of Type 2 diabetes over 6 years in HCHS/SOL, highlighting origin group differences and associations with cardiovascular disease (CVD). The second presentation will examine adverse childhood experiences and their associations with risk for diabetes and CVD and will highlight acculturation factors that moderate these relationships. The third presentation will examine social adversity factors as predictors of risk for comorbid depression and diabetes in HCHS/SOL participants. The discussant will address the implications of these findings and will highlight the role of the Latino Network for Diabetes Translational Research, a National Resource Core based in the NIDDK-funded New York Regional Center for Diabetes Translation Research, in supporting collaborative translational research for diabetes prevention and control in the U.S. Latino population.

Symposium 8A

PREVALENCE AND INCIDENCE OF DIABETES IN THE HISPANIC COMMUNITY HEALTH STUDY/STUDY OF LATINOS (HCHS/SOL)

Neil Schneiderman, PhD

Diabetes mellitus (DM) has been associated with elevated risk of cardiovascular disease (CVD). The nature of this relationship as a function of Hispanic/Latino (H/L) background was examined over 6 years in HCHS/SOL. Prevalence estimates were weighted to the known population distribution, adjusted for sampling probability and nonresponse, and trimmed to handle extreme values of weights. Age-adjusted incidence rates/100 person years were estimated across visits based upon Poisson regression with robust variance taking into account the complex survey design. Both prevalence and incidence values are presented as % (95% CI). Based upon 16386 participants at V1 and about 93% of the expected 11706 participants at V2, DM prevalence was 17.8 (17.0, 18.6) at V1 and 19.8 (18.84, 20.88) at V2. Prevalence of DM at V2 was lowest, 10.6 (8.49, 13.21) for those of South American and highest for those of Puerto Rican, 22.6 (19.87, 25.59) background. The overall prevalence of CVD was significantly higher for DM than for non-DM participants at V2: 10.7 (8.50, 13.49) vs 5.2 (4.52, 6.05). The incidence rate, 0.69 (0.54, 0.87) vs. 0.19 (0.15, 0.25) was also higher for DM. The relationship of CVD prevalence to DM status revealed different patterns among H/L background groups. At V2 South Americans showed relatively low CVD prevalence, 6.3 (3.35, 11.36) with DM vs. 4.0 (2.33, 6.62) without DM. In contrast Puerto Ricans showed CVD prevalence of 20.3 (11.89, 32.38) with DM, but only 6.6 (5.86, 8.95) without DM. Our results confirm that the overall prevalence of CVD is higher for DM than for non-DM participants and that the DM-CVD relationship varies markedly as a function of H/L background.

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Symposium 8B

ADVERSE CHILDHOOD EXPERIENCES AND THEIR ASSOCIATION WITH DIABETES AND CORONARY HEART DISEASE IN HCHS/SOL

Dr. Maria Llabre, PhD

Much of what we know about associations between adverse childhood experiences (ACE) and adult disease comes from the ACE study (Felitti et al., 1998) of over 17,000 middle class US adults. The ACEs include physical, emotional, and sexual abuse, physical and emotional neglect, having a family member go to prison, physical abuse of the mother, having a family member with mental illness or abusing drugs, and parental divorce. Results from the original study showed over 2/3 of adults report at least one and about 10% of men and 15% of women report 4 or more ACEs. ACEs have been linked to heart disease and diabetes, among other chronic diseases and risk behaviors. Only a small percent of participants in the original study were Hispanic. Within the HCHS/SOL we assessed ACEs in 5,117 adult participants and found 77% reported at least one ACE and over 28% reported 4 or more. However, the associations with disease were weaker in HCHS/SOL compared to the original study. With respect to diabetes, the association between ACEs and disease was not significant, once risk factors (including BMI) were controlled. There was an 8% increase in the odds of having CHD for each additional ACE. We examined several potential moderators of these associations, including social support, language use and years in the US. While social support did not moderate the associations, the two measures of acculturation moderated the association of ACEs with CHD. Stronger associations were observed with participants who reported in English or those living longer in the US. In interpreting results, we discuss the role of language and culture in the appraisal of stress in CHD and the major role of obesity as a primary risk factor for diabetes.

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Symposium 8C

ASSOCIATION OF SOCIAL ADVERSITY WITH COMORBID DIABETES AND DEPRESSION SYMPTOMS IN THE HCHS/SOL: A SYNDOMIC APPROACH.

Ms. Jessica McCurley, M.S., M.PH

U.S. Hispanics/Latinos experience high lifetime risk for type 2 diabetes and concurrent psychological depression. This comorbidity is associated with poorer diabetes management, worse outcomes in both conditions, and higher mortality. Informed by syndemic theory, this study explored associations of socioeconomic and psychosocial adversity [low income/education, trauma history, adverse childhood experiences (ACEs), perceived ethnic discrimination, and neighborhood problems (e.g., lack of healthy foods, violence)] with comorbid diabetes and depression symptoms in the Hispanic Community Health Study/Study of Latinos Sociocultural Ancillary Study. Participants were 5247 Hispanic/Latino adults aged 18–74 who completed a self-report measures and objective assessment of diabetes. Multinomial logistic regression analyses examined associations of adversity variables with comorbid diabetes and clinically significant depression. Household income <\$30,000/year was associated with higher odds of diabetes/depression comorbidity (OR = 4.61, 95% CI: 2.89, 7.33), as was each standard deviation increase in ACEs (OR = 1.41, 95% CI: 1.16, 1.71), discrimination (OR = 1.23, 95% CI: 1.01, 1.50), and neighborhood problems (OR = 1.53, 95% CI: 1.30, 1.80), compared to individuals with no diabetes/low depression symptoms. Low income, ACEs, ethnic discrimination, and neighborhood problems are related to higher odds of diabetes/depression comorbidity in U.S. Hispanics/Latinos. Future studies should explore these relationships longitudinally.

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Symposium 9

8:00 AM-9:15 AM

HEALTH NEUROSCIENCE: FUTURE DIRECTIONS IN MIND AND BRAIN RESEARCH.

Elliott A. Beaton, Ph.D.¹, Peter Hall, Ph.D.², Warren K. Bickel, Ph.D.³¹University of New Orleans, New Orleans, LA; ²University of Waterloo, Waterloo, ON, Canada; ³Virginia Tech Carilion Research Institute, Roanoke, VA

Health Neuroscience is a relatively new field that is dedicated to bringing neuroscience concepts and methods to bear on topics in disease prevention and health promotion. Within this framework, the brain can be a predictor, a mediator, a moderator, or an outcome. In the current symposium, we explore several of these possibilities. The first talk provides an example of the brain-as-outcome approach, with reference to the behavioral and structural brain consequences of a high-risk genetic disorder. The second talk describes a brain-as-mediator and brain-as-moderator approach involving attitudes toward high calorie snack foods in the context of a neuromodulation paradigm targeting self-control networks. Finally, the third speaker describes a novel method for balancing executive and controlled processing via the use of narrative interventions in two studies involving current smokers. The discussion will focus on cross-cutting themes--brain health, cognitive control, and delay discounting--that might push forward the boundaries of what methods are used in behavioral medicine research, what concepts are brought to bear on important questions, and what new approaches can be derived for intervention.

All three studies in this symposium make use of methods that are currently used only occasionally in behavioral medicine: functional magnetic resonance imaging/structural MRI, neuromodulation (specifically repetitive transcranial magnetic stimulation; rTMS), and delay discounting paradigms coupled with narrative methods. There is considerable potential for such methods to benefit behavioral medicine research, particularly when used to explore research questions that are rarely addressed in basic neuroscience or psychiatric research contexts. For instance, learning about the role of the brain in modulation of emotion/stress responses, social cognitive decision-making processes, and behavior implementation is of central interest to most in the field. Beyond the specific studies described, we will attempt to provide an accessible overview of the techniques themselves and describe some additional examples of questions that could be addressed using them in the field of behavioral medicine.

Symposium 9A

BRAIN AND HORMONAL CORRELATES OF STRESS REACTIVITY AND VULNERABILITY IN CHILDREN AT ULTRA-HIGH RISK FOR SCHIZOPHRENIA.

Dr. Elliott A. Beaton, Ph.D.

Background: Children with 22q11.2 deletion syndrome (22q11.2DS) face complex and serious medical, behavioral, and socioemotional challenges. 25 to 30 percent will develop schizophrenia (SCZ). Stress and related physiological sequelae may contribute to the development of psychosis in this population via damage to components of the salience network including the hippocampus. We are searching for early behavioral- and biomarkers of risk that also provide insight into the etiopathology of SCZ in this population.

Methods: Participants were 8–16 year-olds with 22q11.2DS ($n=21$) and healthy-controls (HC; $n=31$). Parents completed the Behavior Assessment System for Children 2nd ed (BASC-2). We measured hypothalamic-pituitary-adrenal (HPA) and sympathetic-adrenomedullary (SAM) activity to a mild stressor via salivary cortisol (CORT), dehydroepiandrosterone (DHEA), and alpha-amylase (AA) before, during, and after a math stressor task. High-resolution brain images were acquired using magnetic resonance imaging. Hippocampi volumes were measured using a semi-automated reconstruction method.

Results: BASC-2 parent reports revealed significant between-group differences including higher atypicality, anxiety, depression, externalizing, and attention problems with lower adaptive function and communication in children with 22q11.2DS. Children with 22q11.2DS had higher levels of CORT and AA with lower levels of DHEA, and a higher CORT/DHEA ratio. Higher levels of AA were associated with anxiety, depression, and internalizing problems. Higher CORT/DHEA ratios were associated with attention difficulties, externalizing, hyperactivity, and poorer adaptive function and communication. Hippocampal volumes were smaller in children with 22q11.2DS (ps

Conclusions: These findings indicate a role for stress-mediated activation of the HPA and SAM systems that could contribute to the etiopathology of schizophrenia in people with 22q11.2DS. Chronically elevated stress likely magnifies congenital brain diatheses and could damage components of the salience network such as the hippocampus. HPA activation may be predictive of externalizing behaviors and SAM activation predictive of internalizing behaviors. Longitudinal study is required to truly test the hypothesis that stress contributes to etiopathology of SCZ in those with 22q11.2DS. Nevertheless, interventions to reduce stress in childhood would improve quality of life and potentially reduce the risk of psychosis in adulthood.

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Symposium 9B

CAUSAL EFFECTS OF THE DLPFC ON THE GENERATION OF EXPLICIT ATTITUDES TOWARDS HIGH CALORIE FOODS: AN RTMS INVESTIGATION.

Dr. Peter Hall, Ph.D.

Background: Attitudes towards high-calorie foods are theorized to be important determinants of actual food consumption, but are potentially subject to impression management. One brain structure whose function is known to enable impression management is the dorsolateral prefrontal cortex (dlPFC). Because impression management might require the suspension of a default tendency to report authentic positive attitudes toward high calorie foods, temporary attenuation of this cortical structure might reveal attitudes that are less contaminated by impression management. Alternatively, it is possible that attenuating dlPFC function might enable visceral drives to override social cognitive evaluation processes altogether, thereby reducing the predictive validity of attitude measures. If the former hypothesis is correct, attitudes should be *more* predictively valid following down-regulation of dlPFC function; if the latter is correct, attitudes should be *less* predictively valid following dlPFC attenuation. In this study we evaluate these two alternative possibilities.

Methods: Young adult female participants ($N=21$; $M_{age}=19.1$) were randomly assigned to active or sham continuous theta-burst stimulation (cTBS; a down-regulating variant of rTMS) targeting the left dlPFC. Participants subsequently completed measures of explicit attitudes toward high calorie foods, and were offered an opportunity to consume high calorie foods (and control foods) in a taste test.

Results: Findings revealed a reliable effect of cTBS (active vs. sham) on attitudes towards high calorie snack foods ($t(1,19)=3.055, p=.007; d=1.34$), such that attitudes toward high calorie foods were significantly more positive following active stimulation ($M=3.40, SD=1.01$) than following sham stimulation ($M=1.97, SD=1.08$). Correlational analyses revealed that attitudes articulated following sham cTBS were moderately strong predictors of consumption of high calorie foods during the taste test ($r=.582, p=.030$); attitudes were not predictive of consumption following active cTBS ($r=.086, p=.406$). Attitudes toward high calorie foods were not predictive of control food consumption in either experimental condition.

Conclusions: Downregulation of the left dlPFC results in reliable increases in positively valenced attitudes towards high-calorie foods. However, such attitudes are less predictive of consumption than when following sham stimulation, suggesting that they may reflect an increased visceral drive for eating rather than a reflection of true social cognitive evaluation processes.

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Symposium 9C

NARRATIVE THEORY: REBALANCING DUAL PROCESSES TO CHANGE CIGARETTE VALUATION

Dr. Warren K. Bickel, Ph.D.

Dysregulation of the impulsive and executive decision systems are common in cigarette smoking and other addictive disorders. Excessive delay discounting (DD) is a trans-disease process contributing to addiction and may be the product of a hyperactive impulsive system, hypoactive executive system, or both. Previous research demonstrates that listening to narratives engages neural structures from both systems. Thus, narratives may be used to rebalance these systems. In two separate studies, we examined the effects of narratives on DD and various measures of cigarette valuation in cigarette smokers.

Study 1 examines the effects of mating narratives on DD and cigarette craving and valuation. Smokers ($N=275$) were randomly assigned to one of three motivational narratives (control, romance, and sex). Participants were more inclined to choose the larger later rewards after reading the romance scenario ($p=0.044$) compared to control. However, the sex scenarios increased their preference for smaller sooner rewards ($p=0.040$). Moreover, reading the romance scenario significantly decreased cigarette craving, while reading the sex scenario increased cigarette's valuation.

Study 2 examines the effect of narratives on cigarette preference and willingness to switch to e-cigarettes. Smokers ($N=162$) were randomly assigned to one of four narratives in which a close friend becomes ill and thinks it is smoking-related. The 4 narratives have different endings. The friend 1) finds out it was just the flu (control), 2) finds out it is because of smoking, 3) expresses remorse for ever starting to smoke and 4) switches to e-cigarettes and feels much better. Compared to controls, lower demand for cigarettes ($p=0.008$) and greater preference for switching to e-cigarettes ($p=0.035$) were reported in the narrative 4. Moreover, changes in DD were differentially observed depending on which narrative the participant experienced.

Conclusions: Narratives interventions can influence DD, alter smoking valuation, and change preference among tobacco products. Hence, narratives have a potential as a component of future addiction interventions.

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Symposium 10

8:00 AM-9:15 AM

GEOFLASHE: EXPLORING THE ROLE OF SPACE AND PLACE ON HEALTH BEHAVIORS

April Oh, PhD, MPH¹, Laura A. Dwyer, PhD², Erin Hennessy, PhD, MPH³, Lilian Perez, PhD, MPH¹, Minal Patel, PhD, MPH⁴¹National Cancer Institute, Rockville, MD; ²Cape Fox Facilities Services, Fountain, CO; ³Tufts University Friedman School of Nutrition Science and Policy, Boston, MA; ⁴NCI, Rockville, MD

Spatial data are increasingly being used in behavioral studies as more research focuses on ecologic approaches to understanding the multilevel influences on health behaviors and behavior change. These studies include examination of the role of neighborhood and environmental exposures on health, and are enabled via GIS tools, greater availability of spatial data, and evolving behavioral theory. To this end, the National Cancer Institute's Family Life, Activity, Sun and Healthy Eating (FLASHE) study geocoded survey participant school and home addresses and calculated 'neighborhood' geospatial variables in these settings for public use. This study involved 1,479 parent-adolescent dyads from across the nation who completed online surveys on cancer-preventive behaviors. The purpose of this panel is two-fold: 1) To describe the availability of the National Cancer Institute's geoFLASHE spatial data for examining contextual correlates of survey participant health behaviors and; 2) Provide examples of how these spatial data can be used to examine the role of neighborhood on cancer preventive health behaviors. The first speaker will provide an overview of the methodology used in geoFLASHE to calculate geospatial variables, with a focus on challenges in operationalizing 'neighborhood' in behavioral studies, and explores the association between neighborhood-level SES and individual-level F/V intake by different neighborhood spatial definitions. Following the methodologic overview, three examples of how spatial data can be integrated with survey data to explore the influence of neighborhood context on behavior will be presented. The first study will describe the relationship between neighborhood SES and parenting (e.g. parenting styles and physical-activity related parenting practices). The second speaker will explore the relationship between school physical activity policies and the school neighborhood environment on adolescent physical activity. The final speaker will describe the association between UV environmental exposure and sun-protective behaviors among parents and their adolescent children. The symposium will end with a discussion of how geospatial data can enhance our understanding of the environmental correlates of health behaviors, and some opportunities and challenges when working with these data in behavioral studies.

Symposium 10A

ASSOCIATIONS BETWEEN NEIGHBORHOOD UV EXPOSURE AND SUN PROTECTION BEHAVIORS AMONG PARENTS AND THEIR ADOLESCENT CHILDREN

Laura A. Dwyer, PhD

Introduction: Associations between geocoded UV exposure and risk of melanoma have been demonstrated in some studies (Richards et al., 2011; Tatalovich et al., 2006). Environmental UV exposure has been infrequently examined in relation to skin cancer prevention behaviors and adolescent outcomes, although research suggests that related aspects of the environment (e.g., temperature or latitude) correlate with sun protection behaviors (Andersen et al., 2016). Examining these relationships may provide insights for educational and targeted skin cancer prevention interventions.

Method: Survey data on sun protection and exposure behaviors were collected in 2014 from parent-adolescent dyads in the National Cancer Institute's Family Life, Activity, Sun, Health, and Eating Study. UV exposure was computed for each dyads' home and adolescents' school locations at multiple neighborhood sizes (400–1200 meters). UV exposure did not significantly vary by neighborhood size (Westat, 2017), so we examined the mean UV exposure for each location as related to behavior. Weighted regressions controlled for age, sex, race/ethnicity, and parent education.

Results: In the full sample of 1,306 dyads, neighborhood UV exposures were not significantly associated with parent or adolescent sunscreen or hat use ($ps \geq .54$) or adolescent use of protective clothing or shade seeking ($ps \geq .07$). However, higher neighborhood UV exposure was positively associated with parent use of protective clothing ($\beta = 0.10, ps < .01$) and shade-seeking ($\beta \geq 0.07, ps < .05$) and negatively associated with time spent in the sun to get a tan among both parents and adolescents ($\beta \leq -0.09, ps < .001$). UV exposure did not predict the number of sunburns reported from the past year. Additional models revealed that some of these associations differed by race/ethnicity. For example, neighborhood UV exposure predicted greater shade seeking among non-Hispanic White parents only ($\beta = 0.12, p = .001$) and lower sunscreen use among Hispanic adolescents only ($\beta \leq -0.27, ps < .01$).

Conclusion: Relationships between neighborhood UV exposures and behavior varied by behavior, by age (adult versus adolescent), and, in some cases, by ethnicity and race. The most salient sun protection behaviors that people engage in may vary by UV exposure, and efforts to promote sun protection may consider including education about UV exposure at one's residential location.

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Symposium 10B

PARENTING IN CONTEXT: UNDERSTANDING NEIGHBORHOOD INFLUENCE

Dr. Erin Hennessy, PhD, MPH

Introduction: Parenting is one of the most important influences on child behavior and health; yet, relatively little is known in about the contextual factors that influence parenting. Moreover, research on the influence of macro-level factors such as neighborhood context on child outcomes has grown but with less attention on potential mechanisms. The purpose of this study is to evaluate one possible mechanism: parenting.

Method: Data were drawn from the 2014 National Cancer Institute's Family Life, Activity, Sun, Health, and Eating (FLASHE) Study, a U.S. survey of parent-adolescent dyads. Six items measuring three parenting style dimensions: demandingness, responsiveness, and autonomy-granting, and were adapted from the valid Parenting Style Inventory-II instrument. Neighborhood socioeconomic status (nSES), a marker of larger institutional and economic need of the community that is not necessarily reflective of individual SES, was defined according to Yost et al. using circular buffers of varying distances (400 meters -1200 meters) from the dyad's home location.

Results: A total of 1,533 parent-adolescent dyads had complete data on: nSES, parenting style, parent sex, and residential tenure. In linear regressions controlling for sex and residential tenure, models showed that nSES was positively associated with autonomy-granting ($B_s = 0.11$, $p < .001$) but not demandingness or responsiveness. At the smallest neighborhood sizes (400-500m), there were significant interactions between nSES and parent sex on autonomy granting: nSES was positively associated with autonomy-granting among mothers ($B = 0.13$, $p < .001$) but not among fathers ($p > 0.19$). Autonomy-granting was also higher among parents reporting more than 15 years at the same address ($B_s = 0.22$, $p < .001$).

Conclusion: This study suggests that one marker of neighborhood context, nSES, is positively associated with some but not all aspects of parenting and that this relationship may vary by factors such as parent sex and residential tenure. FLASHE provides the breadth and depth of data needed to significantly expand research on the multilevel influences of health. Future analyses will evaluate other potential moderators (e.g. family income), and test mediation models with child outcomes. Increased understanding of neighborhood context may inform more tailored and specific parenting interventions to improve child health.

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Symposium 10C

DO SCHOOL POLICIES AND ENVIRONMENT EXPLAIN ADOLESCENT SCHOOL-RELATED PHYSICAL ACTIVITY?

Dr. Lilian Perez, PhD, MPH

Introduction: Few U.S. adolescents report meeting federal aerobic physical activity (PA) guidelines, with a lower prevalence reported by high school versus middle school students. School policies and environments around schools may influence adolescent time use, including physical activity and transportation behavior. However, evidence supporting the effects of such contextual factors on PA is limited. This study examined associations of school policy and environments with adolescent physical activity.

Methods: Cross-sectional data came from the adolescent sample of the Family Life, Activity, Sun, Health, and Eating study ($N=963$; age range: 12–17 years). Minutes/week of school-related moderate-to-vigorous physical activity (MVPA) were estimated based on self-reported PA during school time and walking or bicycling to/from school, calibrated with an accelerometer substudy. Presence/absence of state policies concerning PA or MVPA were obtained from the Classification of Laws Associated with School Students (CLASS) data resource. Census data were used to estimate neighborhood variables within a 1200-m street-network buffer around each respondent's school: walkability via population density, age of neighborhood homes, and length of commuting time as well as neighborhood socio-economic status. Generalized linear regression models tested associations of policy and environment factors, and their interactions, with school-related MVPA, controlling for socio-demographics, urbanicity, and distance from home to school. Analyses were also stratified by school level (middle/high).

Results: Greater school-related MVPA was associated with presence of a state school PA policy (β (SE)=4.3 (2.1), $p=.04$) and attending a school in a higher density (β (SE)=4.8 (1.8), $p=.01$) and older neighborhood (β (SE)=2.6 (1.2), $p=.03$). Stratified models showed the positive associations of PA policy ($p=.03$) and older neighborhood ($p=.05$) were significant only among those in high school. The positive association of higher density was significant only among those in middle school ($p=.01$). No significant policy by environment interactions were found.

Discussion: Few past studies have examined associations of school PA policies and school environments with high-quality measurement of school-related PA. Our findings are consistent with ecologic approaches that posit policy and environmental factors are related to physical activity behaviors.

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Symposium 10D

EXPLORING VARIOUS GEOSPATIAL DEFINITIONS OF NEIGHBORHOOD SES IN THE CONTEXT OF ADULT FRUIT AND VEGETABLE CONSUMPTION

Dr. Minal Patel, PhD, MPH

Background: Neighborhood level contextual factors, such as neighborhood socioeconomic status (NSES), are important for understanding the determinants of health behaviors beyond individual factors. However, understanding the role of the neighborhood requires defining spatial boundaries since different spatial definitions of neighborhoods can lead to inconsistent associations between neighborhood factors and health behaviors and outcomes. In addition, how to define and measure neighborhood characteristics is important for behavioral studies with the growing adoption of social ecologic models. Using varying neighborhood size and shape to measure NSES, we examined 1) the associations between NSES using different neighborhood definitions, and 2) what neighborhood size and shape is associated with fruit and vegetable (*f/v*) consumption in a sample of U.S. adults. Additional secondary analyses examine the potential moderating role of self-efficacy on the relationship of NSES and fruit and vegetable consumption.

Methods: Data were from GeoFLASHE, a geospatial extension of the Family Life, Activity, Sun, Health and Eating Study (FLASHE) ($n=1736$). Weighted census demographic NSES percentages were calculated using a composite measure of seven census indicator measures at buffer sizes of: 400, 500, 750, 800, 1000 and 1200 meters(m). Pearson's correlations examined the NSES Index at various buffer sizes and shapes. Weighted bivariate and multivariate analyses tested NSES and *f/v* consumption, adjusting for age, sex, education, urbanicity, race/ethnicity, and self-efficacy. Adjusted models were further stratified by sex.

Results: NSES are highly correlated between various buffers ($r \geq .99$, $p < .01$). Circular buffers of all sizes and street NSES buffers 750m and larger remain significant in adjusted models for women only ($\beta: 0.13-0.18$; $p < 0.05$). Individuals with higher self-efficacy to eat fruits and vegetables had higher *f/v* consumption regardless of the NSES buffer size and shape or when stratified by sex ($\beta: 1.02-1.10$; $p < 0.05$).

Conclusion: For behavioral studies that include the neighborhood environment, definitions of space can vary, impacting results. This methods analysis, found that although different NSES buffers are highly correlated, researchers should conceptually determine spatial areas a priori, depending on the research question and behavior examined. Further applications to other health behaviors include physical activity, sedentary behaviors, and tobacco use.

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Symposium 11

8:00 AM-9:15 AM

UNDERSTANDING THE CONTRIBUTION OF BINGE EATING TO OVERWEIGHT AND OBESITY AMONG DIVERSE POPULATIONS

Alyssa Vela, M.A.¹, Brooke Palmer, M.A.², Alyssa Minnick, M.S.³, Emily Panza, M.S.⁴, Virginia Gil-Rivas, Ph.D.⁵

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The majority of U.S. adults are overweight or obese (Ogden, Carroll, Fryar, & Flegal, 2016). Obesity is disproportionately prevalent among minority group members and is associated with increased risk for cardiovascular disease, type 2 diabetes, cancer, and poor quality of life (DHSS, 2010; Ogden et al., 2016). The incidence of binge eating behaviors is elevated among obese adults, and confers independent risks for metabolic and cardiovascular diseases (Kenardy et al., 2001). Despite the health implications of binge eating, the majority of studies have investigated binge eating behaviors among White women, and research is needed to elucidate the sociocultural and individual factors that may contribute to binge eating and obesity in these groups. The current symposium aims to fill this gap in the literature by identifying the correlates of binge eating and overweight and obesity, implications for binge eating treatments among minority group members, and importance of considering binge eating for health maintenance including weight and chronic illness management. Specifically, the first presentation will discuss the role of sociocultural factors (i.e., discrimination, ethnic identity, and psychological distress) in contributing to binge eating symptoms among a racial and ethnically diverse group of college men. Our next presentation will build on this by exploring how minority stress related to sexual orientation, weight, and gender contributes to binge eating behaviors among sexual minority women. Our third presentation will explore individual and social factors associated with treatment-seeking among Latina women who binge eat. Our final presentation will present the preliminary findings of the efficacy and acceptability of a guided self-help lifestyle intervention for reducing disordered eating behaviors among women with Type 2 diabetes. The symposium discussant, will tie together these diverse presentations to highlight the relevance of the unique experiences and needs of diverse populations who commonly engage in binge eating. Implications for future research, prevention, and treatment efforts will also be explored.

Symposium 11A

AN INTERVENTION FOR WOMEN WITH COMORBID TYPE 2 DIABETES MELLITUS & DISORDERED EATING

Alyssa Vela, M.A.

Rates of type 2 (T2) diabetes mellitus continue to rise in the United States and around the world, with growth to epidemic proportions largely attributed to health behaviors such as poor diet, overeating, and lack of physical activity. For those with T2 diabetes, management is demanding, requiring daily effort with responsibilities pertaining to eating behaviors, physical activity, and blood glucose monitoring. Eating is often the most challenging aspect of diabetes management, and when disordered, has been associated with increased risk for diabetes-related complications. Disordered eating (i.e., binge, emotional, external, and restrictive types of eating behaviors), appears to occur more often in populations diagnosed with T2 diabetes than in the general population. Disordered eating for individuals with T2 diabetes has been associated with increased risk for severe diabetes-related complications, as well as higher HbA1c and poor diabetes management. Thus, there is a need for further development of low-cost and accessible treatment modalities for T2 diabetes and related health problems, including disordered eating.

The current project sought to assess the efficacy and acceptability of an eating-focused CBT guided-self help (CBTgsh) lifestyle intervention for women with T2 diabetes who engage in disordered eating and wish to improve their eating behaviors, health and well-being. Ten women completed the 12-week intervention that sought to support them in establishing a regular pattern of eating, food monitoring, adjusting thought patterns about eating and health, and increasing physical activity. Paired *t*-tests indicated that the intervention was effective in reducing disordered eating behaviors, HbA1c, and diabetes distress. Constant-comparative analysis of qualitative data regarding the intervention revealed several themes. Specifically, participants liked the connection and accountability, the inclusion of clear and useful information, the thought provoking material, and the encouragement of positive change in perspective. Participants also suggested modifications such as developing an easier way of monitoring, and the addition of group support. Notably, participants spoke highly of the program, with some stating that it was life changing, and that they would recommend the intervention to others. Recommendations for the further development and dissemination of the intervention will be discussed.

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Symposium 11B

UNDERSTANDING TREATMENT-SEEKING BEHAVIOR IN LATINAS WITH BINGE-EATING

Brooke Palmer, M.A.

Binge eating disorders are related to numerous physical and mental health consequences, yet treatment rates are low, especially in minority populations. Low treatment rates may be due to stigma (in both patient and providers) and lack of treatment services. Latinas in particular have high rates of binge eating (BE) behavior with very low rates of treatment utilization. This study investigated Latinas' beliefs and behaviors about BE in order to better understand the factors associated with treatment-seeking. Data from a community sample of Latinas ($N = 167$) from Charlotte, NC and Los Angeles, CA were analyzed. Participants self-identified as having a problem with overeating participated in an interview assessing BE and comorbid symptoms. Qualitative data were also analyzed from a subsample ($n = 17$) of participants who were recruited into a CBT-based guided self-help intervention to reduce BE. Results indicated that participants were engaging in BE frequently ($M = 6.2$, $SD = 7.31$ objective binge episodes in the prior 28 days), and that the majority of participants (54%) met DSM-5 criteria for an eating disorder. Many (69%) participants reported that they felt they had an eating problem, and 56% wanted help for an eating problem, while only 9% of the participants had received treatment for an eating problem despite the fact that the majority (77%) had insurance in the previous 5 years. Logistic regression revealed that severity of BE was not associated with participants identifying their eating behavior as problematic or wanting treatment. Overvaluing their weight and shape, however, did predict wanting treatment and identifying disordered eating while BMI only predicted wanting treatment. In order to understand the heterogeneous picture of Latinas with BE, qualitative data from participants highlighted additional themes that further exposed the decision-making process for treatment-seeking in Latinas with BE. In particular, Latinas who desired help with their BE did not have family support, whereas family support was reported by those who did not want help. In addition, multiple participants reported that they were not aware that their BE was problematic until completing the interview. These findings help explain discrepancies in participants desire to seek treatment. Implications for prevention and treatment efforts will be discussed.

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Symposium 11C

BINGE EATING AMONG COLLEGE MEN: EXPLORING THE ROLE OF RACE AND ETHNICITY

Alyssa Minnick, M.S.

Extant literature is currently limited in the examination of binge eating among college age men, particularly those from racial and ethnically diverse backgrounds. Therefore, the present study explored predictors of the frequency of binge eating episodes in a sample of racial/ethnically diverse college men. A total of 486 young college men (aged 18–24 years old) completed an online survey that included questionnaires about frequency of perceived racial-based discrimination experiences, perceived stress, psychological distress, and eating disorder symptomatology (e.g., binge eating episodes). Path analyses were conducted with the overall sample and the subsample of men from minority backgrounds ($n = 170$). The results indicated that, among the overall sample, race/ethnicity had an indirect effect on frequency of binge eating episodes through perceived discrimination, perceived stress, and psychological distress; however, psychological distress did not predict binge eating among men from minority backgrounds. These findings indicate racial/ethnic differences in eating pathology among men, suggesting the need for culturally-appropriate behavioral health interventions. Additional research is needed to clarify predictors of binge eating in both groups, with specific emphasis on identifying possible factors associated with disordered eating among men from ethnic/racial minority backgrounds.

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Symposium 11D

OVEREATING AND BINGE EATING AMONG OVERWEIGHT AND OBESE SEXUAL MINORITY WOMEN

Emily Panza, M.S.

Sexual minority women display disproportionately higher rates of disordered eating behaviors, such as binge eating, fasting, and vomiting, than their heterosexual counterparts (Bankoff & Pantalone, 2014). However, little research has examined *why* this disparity exists. The current study examined whether minority stress, including repeated experiences of external stigmatization, may be one contributing factor (Meyer, 2003). Sexual minority women belong to multiple socially stigmatized groups: being non-heterosexual, being female, and for 60%, being overweight. Exposure to unique and chronic minority stressors may cause chronic elevations in stress and negative emotion that some sexual minority women may try to regulate by overeating and/or binge eating.

To test this proposed model, the current study used Ecological Momentary Assessment (EMA) to examine whether lifetime and acute minority stress increased risk for overeating and binge eating in sexual minority women. 55 overweight or obese ($BMI > 25$) sexual minority (e.g., lesbian, bisexual) women were recruited from the community to complete baseline assessments of eating behavior and minority stress due to sexual orientation, weight, and gender. For the following five days, participants used a smartphone application to report experiences of stigmatization, overeating and binge eating five times daily.

Findings revealed that women who reported greater lifetime heterosexual, gender, and weight-based stigma reported higher baseline levels of disordered eating and binge eating. As expected, greater daily negative emotion and daily stress interacted with daily stigma to predict greater daily binge eating, and stigma events during the EMA period were associated with greater concurrent overeating at the same time point. Finally, being stigmatized on any given day was associated with more overeating and binge eating on that day.

The current study provides preliminary support for minority stress as a factor contributing to disproportionate rates of overeating and binge eating among sexual minority women. Given the paucity of research in this area, findings justify future research to unpack the relevance and significance of minority stress as a risk factor for disordered eating behaviors in this group. This will be essential for developing effective interventions to reduce disordered eating behaviors and to improve health among sexual minority women.

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Symposium 12

8:00 AM-9:15 AM

BEYOND KNOWLEDGE: ADDRESSING GENOMIC LITERACY IN THE TRANSLATION OF GENOMIC TECHNOLOGIES

Kimberly Kaphingst, ScD¹, Catharine Wang, PhD, MSc², Galen Joseph, PhD³, Deborah Bowen, PhD⁴¹University of Utah, Salt Lake City, UT; ²Boston University School of Public Health, Boston, MA; ³University of California, San Francisco, San Francisco, CA; ⁴University of Washington, Seattle, WA

In the era of precision medicine, genetic and genomic technologies are increasingly becoming part of mainstream medicine. Effective translation of this information is critical to its clinical utility and impact on population health outcomes. This translation will depend, in part, on effective communication and the genomic literacy of those delivering the information (e.g., clinicians, interactive electronic tools) as well as the recipients (e.g., patients, general public). The National Human Genome Research Institute's 2013 report on genomic literacy in the US defined *genomic health literacy* as the capacity to obtain, process, understand, and use genomic information for health-related decision-making. Yet, the conceptualization and operationalization of genomic literacy in applied behavioral research has been limited to date. Moreover, intervention studies to address genomic literacy are lacking. This symposium will highlight ongoing research that examines genomic literacy from the conceptual to the practical, and presents examples of how genomic literacy has been addressed in communication interventions. The first presenter will report on the findings of a scoping literature review, which examined how genomic literacy has been conceptualized across studies, and will discuss the limitations in current definitions and intervention applications. The second presenter will describe a web-based family health history tool designed for diverse underserved patients and discuss the implications of design considerations for patients with limited genomic and computer literacy. The third presenter will describe an intervention designed to improve oral communication between genetic counselors and their linguistically diverse, limited health literacy patients, and discuss how the intervention addressed both the information needs of patients and the communication skills of counselors. Finally, the discussant will summarize the implications of the findings presented and consider next steps for advancing research in genomic literacy. This symposium will highlight the need to move beyond knowledge in considering genomic literacy and identify strategies for better integration of genomic literacy into genomic translation efforts.

Symposium 12A

CONCEPTUAL AND MEASUREMENT ISSUES IN DEFINING GENOMIC LITERACY

Kimberly Kaphingst, ScD

In the context of cancer, genetic and genomic information have become increasingly important in research and clinical care. The successful translation of this information into patient-centered care and improved outcomes is thought to be dependent upon providers' and patients' genomic literacy, which can be conceptualized as genetics- and genomics-related knowledge and skills. However, the domains of knowledge and skills most critical to individuals' use of this information need to be defined. We therefore examined how genomic literacy was addressed in the recent literature. We conducted a scoping review to synthesize the recent published research on communication of genetic and genomic information related to cancer. For the present analysis, we examined data regarding whether and how the communication studies assessed or described genomic literacy, health literacy, numeracy, or genomics-related knowledge. A comprehensive search for papers published between 2010 and 2017 was conducted in six databases. The search resulted in 9,251 unique records, and 537 papers were included in the review. Few papers assessed genomic literacy (1.2%), health literacy (3.0%) or numeracy (4.2%). Only one paper included a validated measure of genomic literacy; a second created a measure that assessed interpretation of genetic risk information. In these studies, genomic literacy was found to be related to learning from a videotaped genetic counseling session and forming opinions about mastectomies. In other studies, genomic literacy was not directly assessed but inadequate genomic literacy was assumed to underlie misunderstandings of information or to mean limited genetic knowledge. More papers included assessments of genetic or genomic knowledge (17.7%). Items used to assess knowledge varied widely and often focused on specific knowledge about mechanisms of inheritance. Few papers provided a conceptual or theoretical rationale for the selection of knowledge items. Based on this synthesis of recent research, we will summarize major findings in how genomic literacy and related constructs are being used in the literature on the communication of genetic and genomic information. We will also describe major domains of genetic and genomics-related knowledge that have been assessed. Emerging conceptual and methodological issues will be highlighted. Further development in this area is critical to translating genetic and genomic discoveries into improvements in population health.

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Symposium 12B

CHALLENGES TO USING WEB-BASED FAMILY HISTORY TOOLS AMONG VULNERABLE PATIENT POPULATIONS

Dr. Catharine Wang, PhD, MSc

Family health history is an important risk factor for chronic disease and its assessment is essential for accurate interpretation of genetic and genomic data. Online tools are currently available to facilitate in the collection of family history, but may be too complex and challenging for many patients to use, particularly those with limited or low health literacy. We developed a computer animated "virtual counselor" (VICKY) to interview patients and collect family history information. VICKY is being evaluated in a randomized controlled trial to evaluate its accuracy compared to My Family Health Portrait (MFHP), a publically available tool developed by the Department of Health and Human Services. As part of the ongoing trial, the usability of both tools is being tracked to identify usability challenges among patients. To date, a total of 95 participants have been enrolled in the trial. Only 38% were able to successfully use MFHP to generate a pedigree, while 90% were able to do this with VICKY. Challenges to MFHP use stemmed from patient frustrations while navigating the tool to enter information. These navigation issues included the inability to enter the tool from the home screen, enter date of birth for self, and adding and saving conditions for self and relatives. Ongoing efforts will monitor the extent to which usability varies as function of demographics (i.e., age, education) and family structure (i.e., size, complexity), particularly among racial/ethnic subgroups. Accuracy of family health history data collected will also be evaluated in comparison to a genetic counselor. Future efforts to develop patient-facing family health history tools will need to consider usability issues to ensure their effective use, particularly among populations with more limited genomic and computer literacy skills.

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Symposium 12C

A PILOT INTERVENTION TO IMPROVE PATIENT-PROVIDER COMMUNICATION IN CANCER GENETIC COUNSELING

Galen Joseph, PhD

Genomic literacy is necessary to realize the promise of Genomic Medicine, particularly in the context of efforts to increase participation of diverse populations in genomics research and clinical practice. Here we present a pilot intervention to improve oral communication between genetic counselors (GCs) and their limited health literacy (LHL) patients. GCs are genetics clinicians who assess risk of hereditary conditions and provide psychosocial counseling and genetics education to patients and their families. This pilot intervention consisted of: communication workshop curriculum development and evaluation; 2-month post-workshop interviews with participating GCs (n=9) about their efforts to apply LHL communication strategies in practice; observations of counseling sessions with 2 trained GCs (n=24) and patient interviews (n=9). The 4.5-hour workshop presented evidenced-based principles and strategies for effective communication with LHL patients (e.g. Plain Language, Teach-back), and exercises to practice adapting them to the counseling context. GCs reported appreciating the opportunity to refine their communication skills; however, they found communication techniques like plain talk and teach back challenging to adopt given their training and communication habits. GCs also raised concerns about achieving informed consent and providing scientifically accurate information when using plain language techniques. Observations and patient interviews showed that GCs were sometimes able to employ the LHL communication strategies to positive effect. Patients left their appointments understanding the implications of the test, in contrast to our prior study which found that many patients were confused about the purpose of genetic testing. These findings are the starting point for a RCT that will compare traditional genetic counseling with a modified protocol incorporating LHL principles and strategies for the return of exome sequencing results to diverse patients as part of the CSER2 (Clinical Sequencing Evidence-Generating Research) consortium. If proven beneficial, we will work with GC training programs and practicing counselors to adopt these modified practices to ensure that the benefits of genomic science reach all populations and do not exacerbate existing health disparities.

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Symposium 13

8:00 AM-9:15 AM

CUSTOMIZED ADHERENCE INTERVENTIONS FOR COMPLEX AND CHALLENGING CLINICAL POPULATIONS

Jennifer B. Levin, PhD¹, Martha Sajatovic, MD², Jessica Montoya, PhD³, David J. Moore, Ph.D.⁴

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Despite considerable progress in the development and efficacy of pharmacological treatments for serious mental health and chronic medical conditions, suboptimal medication adherence remains a major obstacle to the success of such medication treatments on health outcomes. The adherence problem becomes even more challenging with the complexity of multi-morbidity. In this symposium, we will introduce various models of adherence behaviors, leading to the development and testing of adherence enhancing interventions applied to individuals with various complex medical and/or serious mental health conditions with notable barriers to treatment adherence. All interventions described have an element of customization. First, Dr. A. will describe a recent randomized control trial of Customized Adherence Enhancement (CAE) compared to an educational control in poorly adherent adults with bipolar disorder. CAE targets patient endorsed barriers to treatment adherence through the administration of 4 potential modules: Psychoeducation, Communication with Providers, Medication Routines, and Substance Abuse using Modified Motivational Interviewing. Next, Dr. B. will describe the results of a study examined whether methamphetamine (MA) users with continuous virologic suppression demonstrate better adherence behaviors (e.g., superior dose timing) than MA users with continuous detectable viral load in response to the Individualized Texting for Adherence Building (iTAB) intervention, whose aim is to promote antiretroviral therapy adherence among persons living with HIV/AIDS who use MA. Finally, Dr. C. will describe the development of an adherence intervention utilizing the iTAB platform, iTAB-CV, informed by feedback from focus groups and will report preliminary data on feasibility and acceptability of the intervention in poorly adherent individuals with hypertension and bipolar disorder. Following completion of the 3 presentations, Dr. D., an expert in adherence interventions and the creator of the iTAB platform, will pull together the presentations by pointing out the shared and differing elements of the various interventions, which depend on both the platforms, patient characteristics, and target outcomes. The session will conclude with panel comments on how the symposium findings can inform future efforts by other researchers and clinicians to optimize medication adherence among individuals with chronic medical and/or mental health conditions with complicating barriers.

Symposium 13A

DEVELOPMENT AND FEASIBILITY OF ITAB-CV FOR POORLY ADHERENT INDIVIDUALS WITH HYPERTENSION AND BIPOLAR DISORDER

Dr. Jennifer B. Levin, PhD

Individuals with Bipolar Disorder (BD) have high rates of chronic medical conditions such as hypertension (HTN) and poor treatment adherence, with increased hospital visits, a mortality rate of approximately twice that of the general population and a shortened life expectancy. Poor antihypertensive adherence occurs in 50–80% of those with BD. No single intervention has strong evidence for improving adherence to antihypertensives, there are few effective interventions to enhance adherence and improve outcomes in BD, and those that exist do not simultaneously target non-psychotropic adherence. A bidirectional text-messaging system (Individualized Texting for Adherence Building; iTAB) has been used in other complex populations where medication adherence is critical for health outcomes. We describe the development phase of a two-phase 24-month project to adapt iTAB for poorly adherent individuals with comorbid HTN and BD.

We used an exploratory sequential mixed methods design to inform Phase II and are evaluating the feasibility and acceptance of the resulting m-Health intervention (iTAB-CV) in the first 7 participants. Focus group inclusion criteria were ≥ 21 years old, self-reported clinical diagnoses of BD and HTN, and current or past difficulties with adherence to antihypertensives. iTAB-CV trial inclusion were ≥ 21 years old, HTN for ≥ 6 months and ≥ 3 months of antihypertensive treatment, BD for ≥ 2 years, ≥ 20% of days with missed antihypertensive doses, and systolic BP of ≥ 130mmHg. Feasibility was measured by response rate to texts for months 1 and 2 of iTAB-CV and exit interview responses.

A total of 13 participants comprised three focus groups. Mean age was 52.8 years (SD=9.46), with 80% female and 92% African American. The original feasibility sample had a mean age of 53.57 (SD=9.66), 57% male, 57% African American. At screen, average % of days with missed doses measured by self-reported Tablets Routine Questionnaire was 44% for HTN and 51% for BD medications and average systolic blood pressure (BP) was 135.8 (SD=8.96) mmHg.

Transcript-based analysis generated data on four patient-centered issues: Barriers to Anti-Hypertensive Medication Adherence, Facilitators to Antihypertensive Medication Adherence, Use and Comfort with Technologies/Texting, and Demonstration/Feedback of iTAB. Mean % response was 68.7 (SD=33.7) for educational/motivational texts and 58.9 (SD=36.1) to mood messages in month 1 and 64.1 (SD=23.4) for educational/motivational texts and 53.5 (SD=29.6) for mood messages in month 2. Exit interviews indicate 85.8% found iTAB-CV messages useful and benefits outweighed the potential downside of receiving texts. 100% would recommend the program to others.

Based on preliminary data, iTAB-CV appears to be feasible and well-received with a high degree of engagement. In the next stage, change in adherence, BP and BD symptoms will be evaluated.

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Symposium 13B

CUSTOMIZED ADHERENCE ENHANCEMENT TO ADDRESS ADHERENCE VULNERABILITIES IN PEOPLE WITH BIPOLAR DISORDER

Dr. Martha Sajatovic, MD

This presentation will present results from a recently completed 6 month, prospective randomized, controlled trial (RCT) of customized adherence enhancement (CAE) vs. broadly-directed, non-individualized education (EDU) in poorly adherent individuals with bipolar disorder (BD). There were 184 participants randomized to receive either CAE (N=92) or EDU (N=92). CAE is a brief behavioral adjunct to standard mental health treatment. Research assessments were conducted at screening, baseline, 10, 14 and 26 weeks follow-up. Mean age of the sample was 47.4 years (SD 10.46), 126 women (68.5%), 123 African-Americans (66.8%). The majority had Type 1 BD (N=136, 73.9%) with an average age of onset of 24 years (SD 12.3). Consistent with the negative effects of BD on both occupational and personal role achievement, only a minority were employed full time (N=7, 3.8%), with 53 (29.1%) living in a private home and 11 (6%) married. Psychiatric comorbidity was common including alcohol disorder (10.5%), post-traumatic stress disorder (40.5%) and generalized anxiety (23.9%). At study screening patients averaged missing 55.2% (SD= 28.21) of BD drugs within the past week and 48.0% (SD= 28.46) within the past month. Comparing change in key outcomes over 26 weeks, CAE was associated with improved medication adherence ($p=.03$) and functional status ($p=.04$) but not with global BD symptoms compared to EDU. CAE appears acceptable to individuals that are often not included in typical research studies (minorities, individuals with known poor adherence). The presentation will discuss additional study findings and opportunities for broader scale-up.

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Symposium 13C

SUPERIOR DOSE TIMING IS RELATED TO HIV UNDETECTABILITY AMONG PLWHA WHO USE METHAMPHETAMINE

Dr. Jessica Montoya, PhD

Background: The effectiveness of antiretroviral (ARV) therapy for HIV suppression depends on adherence. Methamphetamine (MA) use poses a barrier to ARV adherence. The individualized texting for adherence building (iTAB) intervention aimed to promote ARV adherence among persons living with HIV/AIDS (PLWHA) who use MA. The present study examines whether MA users with continuous virologic suppression (CS) demonstrate better adherence behaviors (e.g., superior dose timing) than MA users with continuous detectable (CD) viral load.

Methods: Participants were randomized 2:1 to iTAB and to an active comparison condition (CTRL); all participants received daily text messages evaluating MA use and depressed mood for six weeks. Participants randomized to iTAB received personalized ARV reminder texts at a self-identified dose time. CS was defined as achieving a viral load ≤ 50 copies/mL at baseline and final study visits; CD was defined as having a viral load > 50 copies/mL at both visits. ARV adherence was tracked with an electronic monitoring system and calculated as the proportion of doses taken. Dose timing was calculated as the difference between actual and intended dose time. Perceived medication management efficacy was assessed with the Beliefs Related to Medications Survey. Mann-Whitney tests were conducted to examine group differences on overall ARV adherence and dose timing.

Results: Among study participants, 45 achieved CS (iTAB: $n=31$, CTRL: $n=14$) and 17 had CD (iTAB: $n=10$, CTRL: $n=7$). The proportion of CS participants did not differ by intervention arm ($p>0.05$). While there were no significant differences in adherence rates between iTAB and CTRL ($p>0.05$), CS participants had a greater adherence rate (74.8%) than CD participants (51.2%; $p=0.001$). Concordantly, CS participants had superior dose timing (median of 117 mins from target dose time) compared to CD participants (median of 185 mins from target dose time; $p=0.02$). Compared to CS participants, CD participants reported lower perceived efficacy of medication management ($p=0.02$). Differences in overall adherence rates between CS and CD groups remained statistically significant when controlling for covariates (i.e., education, ethnicity, and medication management efficacy).

Conclusion: A subset of PLWHA who use MA demonstrate adherence behaviors (e.g., superior dose timing) that are associated with CS. Dose timing may be a specific behavior to target in interventions promoting adherence among substance-using populations.

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Symposium 14

8:00 AM-9:15 AM

INTIMATE PARTNER VIOLENCE PREDICTS POOR HEALTH, BUT MAYBE HELP IS ON THE WAY?

Andrea D. Clements, PhD¹, Matthew W. Henninger, BA², Emily Rothman, ScD³, Tamara Newton, PhD⁴¹Department of Psychology, East Tennessee State University, Johnson City, TN, TN; ²The Miriam Hospital, Brookfield, CT; ³Boston University, Boston, MA; ⁴University of Louisville, Louisville, KY

Intimate Partner Violence (IPV) is an important public health concern. IPV is both a risk factor for other health conditions such as substance abuse, and is also predicted by lifestyle factors such as divorce. The papers included in this symposium confirm some of these relationships. Henninger, McAdams, Clements, Rothman, and Bailey confirm a suspected relationship between IPV and substance abuse in pregnant women in Southern Appalachia, with opioid use being significantly related to physical IPV. Newton and Patton also confirmed that among women who have experienced multiple marital dissolutions IPV predicted poor physical health. Although not surprising, the studies confirm that IPV is related to health risk behaviors and poor health. The third paper, however, by Clements, Haas, Bastian, and Cyphers, offers hope for beginning to address IPV. They have been developing a trauma informed workforce over the past two years, and have seen a rapid increase in familiarity in trauma informed care (TIC), and agencies have begun to report implementation of TIC practices. Hopefully this increase in the use of TIC will be helpful in alleviating some of the risk factors for IPV as well as IPV itself.

Symposium 14A

ADDRESSING INTIMATE PARTNER VIOLENCE: DEVELOPMENT OF A TRAUMA INFORMED WORKFORCE

Dr. Andrea D. Clements, PhD

Introduction: A trauma informed system of care has been under development in Johnson City, Tennessee since fall 2015, with the goal of developing a trauma informed workforce, which is vital for addressing intimate partner violence. Over 30 separate Trauma Informed Care (TIC) training events, community talks, film showings, and two train-the-trainer sessions have been held in Northeast Tennessee, attended by more than 2000 participants, since in October 2015.

Methods: Online surveys using snowball sampling have been conducted at six month intervals beginning prior to initial training in order to document change over time in familiarity with TIC. Each survey also captured detailed information about trauma-informed care implementation within area organizations, including TIC understanding; client trauma screening; use of trauma assessment data in client interaction; consideration of cultural appropriateness of assessment and treatment; promotion of resilience and protective factors; consideration of trauma and its effects in extended family of clients and in staff; administrative support of trauma-informed approaches in areas of staffing, staff training, assessment, agency self-monitoring, and budgeting; TIC alignment of physical environment; offering opportunities for survivor feedback; and investigation of TIC alignment of referral agencies.

Results: The initial survey (October 2015) yielded 105 responses from multiple occupational areas (law enforcement, education, social work, psychology, higher education, nursing, counseling, probation/parole, faith-based organizations). At that time 42.1% were familiar with TIC. The online survey was repeated using the same email solicitation methodology, with increases in familiarity at each time point (April 2016, 80.4% familiar; October 2016, 84% familiar; April 2017, 86.2% familiar). By the time of the most recent survey in April 2017, only 5.2% indicated they were unfamiliar with TIC, down from 23.6% at the time of the baseline survey. Areas of increased TIC use included: trauma screening and use of findings with clients and monitoring progress toward becoming more trauma-informed. Little or no change has been seen in soliciting survivor feedback, formal measurement of TIC procedures or TIC-focused staffing and budgeting.

Conclusions: This study confirms that TIC understanding and implementation can be increased through community training events.

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Symposium 14B

INTIMATE PARTNER VIOLENCE VICTIMIZATION AND OPIOID USE BY PREGNANT WOMEN IN RURAL APPALACHIA: A CROSS-SECTIONAL ANALYSIS

Matthew W. Henninger, BA

Introduction. Intimate partner violence (IPV) and comorbid substance use are substantial and consequential public health problems. The specific subtopic of opioid use by pregnant women and its relationship to IPV victimization and adverse fetal and maternal health outcomes is understudied but critically important. Recent research suggests that 75% of a sample of pregnant women in rural southeastern counties of Appalachia experienced IPV in the past year, and that 98% of the women also engaged in both past year and lifetime illegal opioid use. Cross-sectional studies indicate that pregnant women in rural communities are at increased risk of experiencing IPV and also at increased risk for illicit opioid use compared to urban-residing pregnant women not exposed to violence. Using a bioecological framework for health promotion, the current study examined the bi-directional relationship between IPV and opioid use in a sample of rural Appalachian pregnant women.

Methods. A convenience sample of pregnant women who were enrolled in a smoking cessation research study was used for this analysis. Participants included 530 pregnant smokers and nonsmokers from six prenatal clinics in the Southern Appalachia who were enrolled in the Tennessee Intervention for Pregnant Smokers (TIPS) study. Data were from self-reported assessments and semi-structured interviews on substance use and IPV conducted from the first trimester of pregnancy until 15 months postpartum.

Results. 426 participants (80.4%) reported experiencing IPV in the past year. Using Pearson Chi-Square, we found that IPV victimization was associated with using at least one of five substances (i.e., opioids, marijuana, sedatives, cocaine, amphetamines; $p < .01$). Of those who reported IPV and any drug use, 14% were using opioids illicitly. When IPV was stratified by subtype—physical, sexual, and psychological—we found that physical IPV was associated with opioid use (87.5% of total opioid users experienced physical IPV; $p < .01$), but that sexual and psychological IPV were not.

Conclusions. This study suggests that there is a need for comprehensive and integrative interventions as well as trauma-informed care practices within prenatal and primary care facilities. This research further identifies the feasibility and preliminary efficacy of evidence-based screening mechanisms and behavioral health programs to support rural pregnant women who use substances.

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Symposium 14C

DIVORCE AND HEALTH: A ROLE FOR PARTNER VIOLENCE?

Dr. Tamara Newton, PhD

A marital status of divorced versus married is a key social determinant of health. It is associated with elevated risk for poorer health, and this risk increases with multiple marital dissolutions. Health does not suffer for all divorced persons, however, and explaining this heterogeneity is a priority. Intimate partner violence (IPV) history is an overlooked, yet potentially critical, factor in the link between divorce and health: IPV histories are up to five times more common among divorced versus married persons, and IPV exposure has been associated with poorer health. The aim of this cross-sectional study was to begin to address this research gap. Aim 1 was to replicate a newly validated approach to IPV classification that is theoretically grounded, and draws on psychological and physical aspects of IPV to identify four groups: No IPV, coercive controlling violence, situational couple violence, coercive control/no violence. Aim 2 was to determine whether IPV, so classified, explains variation in self-reported health in women with divorce histories. Midlife women ($N = 192$; median of 8.58 years post-divorce) completed validated self-report measures of direct violence and coercive control in prior marriages, and current mental and physical health. Analyses were conducted separately for women with one ($n = 73$) or multiple ($n = 119$) divorces. In both subsamples, IPV classification was related to theoretically associated features (i.e., frequency of violence and IPA-related injury, number of severe acts of violence) as predicted, replicating the original validation study ($ps < .01$). In women with one divorce, there were no statistically significant associations between the IPV classification and self-reported mental ($p = 0.33$) or physical health ($p = 0.08$). In women with multiple divorces, there were statistically significant associations between the IPV classification and physical health ($p = 0.007$), but not mental health ($p = 0.20$). Specifically, women with histories of situational couple violence or coercive controlling violence reported poorer physical health than women without IPV histories ($ps < .008$), with medium effects. Among midlife women with divorce histories, attention to IPV helps identify those with poorer physical health. This lays the groundwork for testing the role of IPV in connections between marital status and health more broadly.

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Symposium 15

8:00 AM-9:15 AM

HEARING HEALTH: OVERCOMING UBIQUITOUS NOISE & STIGMA, OPTIMIZING CARE, AND IMPROVING QUALITY OF LIFE

Amy Boudin-George, Au.D.¹, Tanisha L. Hammill, PhD, MPH², M. Patrick Feeney, Ph.D.³, William J. Murphy, Ph.D.⁴

¹DOD Hearing Center of Excellence, JBSA Lackland, TX; ²DoD Hearing Center of Excellence, New Braunfels, TX; ³VA Portland Health Care System, West Linn, OR; ⁴National Institute for Occupational Safety and Health (NIOSH)/Centers for Disease Control (CDC), Cincinnati, OH

Hearing loss and tinnitus were the most prevalent service connected disabilities for Veterans, according to the Fiscal Year 2016 Veterans Benefits Administration Report. While these disorders are largely preventable, we continue to see the cases rise, rather than decline in Veterans. Further, sensorineural hearing loss tends to be progressive and compounded by external factors, including the presence of diabetes, administration of ototoxic medications (including anti-neoplastic agents), and, most frequently, exposure to excessive occupational and/or recreational noise. The effects of hearing loss and tinnitus on quality of life are substantial when in isolation, having social and cognitive effects that can create significant detriments in the work-place and in relationships. When present as a co-morbidity, such as with diabetes, depression, or secondary to aggressive treatment for cancer, the effects of hearing loss and tinnitus are farther-reaching. Patients can have difficulty following conversations with providers, which can create issues understanding and adhering to treatment care plans. The aim of this symposium is to introduce Hearing Health to the SBM, posed as a new focal topic for adoption by the community at large. This symposium will provide a framework for discussion of the effects of auditory/vestibular disorders on patient quality of life and, potentially, on research outcomes by characterizing the populations affected, the associated social/emotional issues, and the work being done to mitigate and rehabilitate these disorders. Representatives from the Department of Defense Hearing Center of Excellence, the VA National Center for Rehabilitative Auditory Research, the National Institutes of Health - National Institute on Deafness and Communication Disorders, and the National Institute for Occupational Safety and Health will be presenting. Each presenter will discuss the research being conducted within their respective purview that drives policy changes and best practice development and, when applicable, their accompanying implementation processes. All talks will explore and highlight ways in which current Hearing Health approaches overlap with existing primary Society of Behavioral Medicine (SBM) topic lanes and expertise.

Symposium 15A

HEARING HEALTH DISORDERS AS A GLOBAL HEALTH ISSUE

Dr. Amy Boudin-George, Au.D.

This presentation will serve as an introduction to hearing health as a global health issue. It will bring to light the need for collaborative efforts to drive behavioral change for the prevention and early identification of hearing health disorders and successful utilization of rehabilitative services, especially for those who experience the effects of a hearing loss that has not yet been diagnosed. This presentation will cover the scope, incidence and prevalence of hearing health disorders, with a view of the epidemiological challenges presented by incomplete data, and the approaches that have been used to overcome these challenges. It will present data from the World Health Organization, Department of Defense (DOD), Department of Veterans Affairs (VA), and the National Health and Nutrition Examination Surveys.

This presentation will provide an overview of the common causes, types, and degrees of hearing loss, with information on the implications of hearing loss severity on child development, social/emotional function, and career development. It will cover conditions that commonly occur as comorbidities with hearing loss and the synergistic effects of these conditions. Mental health diagnoses such as depression, anxiety, and dementia can be confounded by hearing loss, as it may impede a patient's ability to communicate effectively with others when it is left untreated. Aggressive treatments for cancer or infectious diseases can include medications that are potentially ototoxic; the identification, mitigation, and/or rehabilitation of any resulting hearing loss is important for the preservation of the patient's ability to communicate with treatment care providers, as well as post-treatment quality of life. Similar statements can be made regarding diabetes, as sensorineural hearing loss is a subset of the associated neuropathy; adherence to treatment care plans and preservation of quality of life relies on successful communication. Tinnitus, the perception of sound when no actual external noise is present, commonly described as ringing in the ears, is a common symptom associated with other health issues. Tinnitus associated with noise-induced hearing loss is largely preventable and can affect a person's quality of life. This presentation will cover types of tinnitus and their social/emotional effects. Cross-organizational efforts to address the prevention and rehabilitation of hearing loss and tinnitus are ongoing; this will introduce these collaborations to set the tone for presentations that follow.

Symposium 15B

HOW THE DEFENSE HEARING CENTER OF EXCELLENCE (HCE) IS RISING TO MEET THE HEARING HEALTH CHALLENGE

Dr. Tanisha L. Hammill, PhD, MPH

Noise-induced hearing loss is frequently associated with military service, primarily due to Service member exposure to hazardous noise levels in operational and training settings common to military life. In light of this inherent risk and common injury, the DOD has implemented many programs aimed at the prevention, mitigation, diagnosis, treatment, and rehabilitation of hearing loss among its Service members. These efforts are varied and require a multitude of approaches and disciplines to develop, disseminate, implement, and evaluate.

This talk will provide the overview of hearing health within the context of the U.S. military environment, specifically highlighting the perspective and initiatives of the DOD Hearing Center of Excellence (HCE). We will discuss areas of interest to the SBM community, including translational planning and execution in the DOD. Specific projects currently underway in the HCE include a Comprehensive Hearing Health Program (CHHP) which aims to positively change knowledge, attitudes, beliefs, and behaviors regarding hearing and hearing health among Service members and their family members Veterans,, and healthcare providers. Additionally, the HCE is focused on identifying gaps in and developing solutions for clinical best practices, as well as creating and executing well-designed dissemination, implementation, and evaluation plans to bring best practices into the clinic or the operational environment as appropriate. Challenges in translational work unique to the DOD, and approaches to mitigate those challenges, will be discussed.

New directions for hearing health relevant to current SBM domains, including policy development, will conclude the talk, including descriptions of DOD Instruction (policy) development, coordination, approval, and impact, as well as HCE's plethora of inter-agency, inter-departmental, and international collaborations, alliances, and partnerships within and external to the DOD including the VA, NIH and NATO partner nations.

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Symposium 15C

RESEARCH AT THE VA RR&D NATIONAL CENTER FOR REHABILITATIVE AUDITORY RESEARCH (NCRAR)

Dr. M. Patrick Feeney, Ph.D.

This presentation will discuss several ongoing research programs at the VA Rehabilitation Research and Development, National Center for Rehabilitative Auditory Research (NCRAR) in Portland, OR. Over a long career at the NCRAR, James Henry, Ph.D. developed Progressive Tinnitus Management, which has been adopted for use in tinnitus treatment in VA audiology clinics. This management scheme will be discussed along with several recent clinical trials using this method. We will also review Dr. Henry's collaborative study with the DoD Hearing Center of Excellence on the effects of noise exposure on hearing and tinnitus in Veterans. Studies of auditory processing in Veterans have shown that those exposed to high-intensity blasts are more likely to experience problems with central auditory processing. Studies by Erick Gallun, Ph.D. and colleagues have examined short and long-term effects of blast exposure on central auditory processing, and new strategies are under way for bringing assessment for these disorders into the clinic using tablet computing. Finally, a phenomenon called "hidden hearing loss" is being explored by Naomi Bramhall, Ph.D. Individuals who have been exposed to high noise levels may have normal thresholds, but exhibit difficulty hearing speech in noisy backgrounds, which is thought, based on animal studies, to be the result of damage to auditory nerve synapses. Dr. Bramhall has found a relationship between noise exposure and speech-in-noise deficits in Veterans with normal hearing thresholds and exposure to high noise levels who also exhibit deficits in brainstem auditory evoked potentials.

Symposium 15D

OVERVIEW OF THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH HEARING LOSS PREVENTION RESEARCH PROGRAM

Dr. William J. Murphy, Ph.D.

The National Institute for Occupational Safety and Health (NIOSH) Hearing Loss Prevention Research program conducts research in surveillance, engineering noise controls, personal protective equipment and best practices and other risk factors for hearing loss prevention. Our efforts in hearing loss surveillance have led to the development of partnership with hearing conservation providers to provide hearing screening data from a wide range of industries to better inform NIOSH about the risks associated with different occupations. Engineering noise control research is largely concentrated on the mining, manufacturing and constructions sectors. The development of new controls leads to partnerships with industrial equipment manufacturers and reduces noise exposures for workers. Personal protective equipment presents many challenges with respect to assessing the performance of new products and technologies (e.g. active noise cancellation or level dependent protectors). As well, our research in hearing protection fit-testing systems informs users about how best to assure their workers are adequately protected. NIOSH provides authoritative recommendations to regulatory agencies (e.g. OSHA, MSHA and EPA) as well as providing best practices to implement hearing loss prevention strategies to safety and health professionals. Finally NIOSH hearing loss prevention research investigates other risk factors such as impulse noise or mixed exposures to noise and ototoxic substances. Our mission is to deliver on the promise of occupational safety and health

Symposium 16

8:00 AM-9:15 AM

EXTENDING OUR REACH: INTEGRATING PSYCHOSOCIAL FACTORS INTO ORTHOPEDIC SURGICAL PRACTICES

Emily Zale, Ph.D.¹, Ana-Maria Vranceanu, Ph.D.¹, Jessica Magidson, Ph.D.², David Ring, M.D., Ph.D.³

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Recently, there has been an emerging emphasis on integrated healthcare that focuses on comprehensively assessing and addressing the biological, psychological and social needs of a patient. In parallel, medical care is undergoing a shift in priorities towards selective hypothesis driven diagnostic tests, caution around medical procedures, and multidisciplinary treatment to optimize resiliency and quality of life. Integrated care models improve patient outcomes, are cost effective, and decrease healthcare utilization over time. Orthopedic surgical practices treat patients across the continuum of health (e.g., acute injury, self-limiting problems, persistent illness, or aspects of normal human aging), and are in an optimal position to evolve healthcare by spearheading the integration of techniques to address psychosocial factors. This symposium presents findings from research that seeks to understand and address psychosocial factors in orthopedic surgical setting. Taken together, the studies presented in this symposium indicate that patients are amenable to psychosocial interventions in orthopedic practices and that such interventions can improve patient outcomes. In the first presentation, Dr. Magidson will present work that identifies patient beliefs (N = 118) about prescription opioid medications and opioid prescribing policies in orthopedic surgery. In the second presentation, Dr. Zale will present results of a randomized controlled trial of a brief mindfulness intervention (N = 125) that can easily be implemented within busy orthopedic settings. In the third presentation, Dr. Vranceanu will present results of a pilot randomized controlled trial (N = 50) of a psychosocial skills-based intervention to optimize recovery after orthopedic injury that is delivered via live videoconferencing. Dr. Ring will discuss common barriers to addressing psychosocial factors in orthopedic practices, such as the traditional mind-body dichotomy, stigma, and patient-provider communication. His discussion will note the clinical implications of the three presented studies, including the ways in which they address current barriers to integrated care, and provide insights for future research directions and policy recommendations.

Symposium 16A

A BRIEF MINDFULNESS EXERCISE IMPROVES ORTHOPEDIC SURGERY PATIENTS' PAIN AND DISTRESS: RESULTS OF A RANDOMIZED CONTROLLED TRIAL

Dr. Emily Zale, Ph.D.

Mindfulness-based interventions teach patients to change their relationship with unpleasant thoughts, feelings, and bodily sensations by allowing those experiences to be held in nonjudgemental awareness rather than dictate behaviors. Mindfulness-based interventions are a promising pain treatment, and have been shown to reduce pain intensity and psychological distress in patients with chronic pain. However, most mindfulness-based interventions cannot be feasibly integrated into busy orthopaedic surgical practices because they are resource-intensive, lengthy, and costly. It is not known whether very brief mindfulness interventions affect pain or distress among orthopedic patients. Patients (N = 125, 50% Female, M age = 55 ± 15) presenting to an orthopedic surgery practice were randomized to receive a 60-second mindfulness-based video exercise or an attention placebo control (educational pamphlet about stress). The study was completed in a private exam room during the normal wait time to see the surgeon, and patients completed measures of pain intensity, state anxiety symptoms, and psychological distress (emotion thermometers measuring anxiety, anger, and depression) pre- and post-intervention. The mindfulness intervention consisted of guided imagery of a distressing thought, generated by the patient, floating away on a star. After controlling for baseline scores, ANCOVA revealed that the mindfulness-based video exercise improved pain intensity, relative to attention placebo control (p = 0.008). Participants who received the mindfulness-based intervention also demonstrated greater improvement all measures of psychosocial distress, as measured by state anxiety symptoms and emotional thermometers (anger, depression, anxiety), relative to participants who received the control intervention (all ps < 0.024). Taken together, results indicate that a very brief, 60-second mindfulness-based video exercise, which addresses multiple barriers to providing mindfulness-based interventions in busy orthopedic practices (e.g., time, cost, the need for trained providers), can be useful in improving momentary pain and distress among patients.

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Symposium 16B

THE TOOLKIT FOR OPTIMAL RECOVERY AFTER INJURY; A PILOT RANDOMIZED CONTROLLED TRIAL VIA SECURE LIVE VIDEO

Dr. Ana-Maria Vranceanu, Ph.D.

Musculoskeletal injuries are the leading cause of hospital admissions for adults, and often lead to long term disability and chronic pain. Our prior work has identified that catastrophic thinking about pain and pain anxiety at 1–2 months after injury (e.g., acute phase) predict pain intensity and disability 5–8 months later (e.g., chronic phase), after controlling for injury severity. We developed the “Toolkit for optimal recovery,” a 4-session program delivered via live video to patients with orthopedic injuries at risk for poor recovery and chronic pain. The Toolkit teaches coping skills (e.g., activity pacing, deep breathing, acceptance and adaptive thinking) using simple nonstigmatizing language.

We conducted a pilot RCT of the Toolkit against usual care. The primary aim was to determine the feasibility and acceptability of the Toolkit. The secondary aim was to determine the preliminary effect of the Toolkit in improving physical function and pain (primary quantitative outcomes) as well as catastrophic thinking about pain, pain anxiety, depressive symptoms and post traumatic stress symptoms (secondary quantitative outcomes) compared to usual care.

Patients were recruited from the Orthopedic Trauma Unit of a major medical center. Out of 101 participants screened, 50 (50%) were depicted as at risk (e.g., scores above median split on catastrophic thinking about pain or pain anxiety), met inclusionary/exclusionary criteria and were randomized (25/arm). Patients had a mean age of 51 and were women in majority (62%), white (80%), employed (82%), without a work related injury (91%) and married (52%). Of these 42 completed the intervention and post test (84%). Satisfaction with the intervention was high ($M=5$, $SD=0$, 1–5 scale). Analyses of covariance showed that patients in the Toolkit improved significantly more from baseline to post intervention on pain ($p=.08$; partial eta squared $.20$), and physical function ($p=.004$; partial eta squared $.31$) as well as all secondary outcome variables ($p=.001-.02$; partial eta squared $.20-.50$).

Results suggest that patients are receptive to skills building when delivered via secure live video. Results of ANCOVA analyses support a fully powered efficacy RCT.

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Symposium 16C

PATIENT BELIEFS ABOUT PRESCRIPTION OPIOIDS AND OPIOID PRESCRIBING POLICIES IN ORTHOPAEDIC SURGERY

Dr. Jessica Magidson, Ph.D.

The United States consumes 80% of the global opioid supply, misuse of prescription opioid medications accounts for more than half (61%) of drug overdose deaths, and opioid-related emergency room visits have increased 99% in the past decade. Orthopaedic surgeons are ranked first in opioid prescribing among all surgical specialties, but represent only 31% of practicing surgeons. Prescription opioid use after orthopaedic surgery is associated with greater pain, poorer physical functioning, and poorer satisfaction with pain relief. The development and implementation of prescribing regulations designed to reduce the number and quantity of opioid pills that are available for misuse and diversion has been identified as a necessary step in confronting the opioid epidemic. Therefore, we sought to assess beliefs of opioid medications and prescribing policies among patients ($N = 118$, Median age = 49, 50% Female) presenting to an orthopaedic surgery practice. The majority of patients (64%) had at least one opioid prescription documented in their medical record and 72% self-reported lifetime prescription opioid use. Results suggest that most patients hold accurate beliefs about opioids (e.g., 80% are aware of addictive properties) and would support opioid prescribing policies that aim to decrease opioid misuse and diversion. However, a small but important number of patients have erroneous beliefs about prescription opioids (e.g., 28% believe opioids work well for long term pain) or believe that doctors should prescribe “as much medication as the patient needs” (7%). The vast majority (98%) of patients want to receive more education about opioids and believe that information about prescription opioids should be provided to all patients in orthopaedic practices. Taken together, results suggest that patients are amenable to opioid prescribing policies that seek to limit opioid use and promote alternative pain relief strategies. Future research should test the effects of opioid prescribing policies and non-opioid pain relief strategies on trends in opioid prescribing and opioid use.

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Symposium 17

8:00 AM-9:15 AM

PASSIVE SENSING OF EATING BEHAVIORS IN THE WILD: CURRENT STATE OF THE ART AND IMPLICATIONS FOR OBESITY RESEARCH

Nabil Alshurafa, PhD¹, Angela F. Pfammatter, PhD², Edward Sazonov, PhD³, Bonnie Spring, PhD¹

¹Northwestern University, Chicago, IL; ²Northwestern University Feinberg School of Medicine, Chicago, IL; ³The University of Alabama, Tuscaloosa, AL

Eating behaviors contribute to a variety of health outcomes such as cardiovascular disease, diabetes, cancer, and obesity. To date, the vast majority of behavioral medicine research has relied on measurements of eating that are inherently flawed. Daily self-monitoring is often burdensome, incomplete, and inaccurate. 24 hour recalls, considered the gold standard in dietary intake assessment, is burdensome, often limited in accuracy, and only captures a snapshot in time of what was consumed. Further, using today’s technology, behavioral scientists are increasingly able to intervene on individuals just-in-time, when the person most needs or would most benefit from support. However, with both popular methods of dietary intake, the measures are retrospective and not assessed while eating is occurring, limiting the potential of using just in time interventions. Other behaviors such as physical activity have benefitted from passive sensing technologies to overcome this barrier. Passive sensing, detection, and prediction of eating has the potential to decrease biased reports of eating, gather real time information about eating, and predict problematic eating behaviors. In this symposium, we seek to review the state of the science of passive sensing of eating in the first presentation. We will then move on to discuss how to build effective machine learning models to detect eating behavior in the wild. In our third presentation, we will discuss the challenges of capturing naturally occurring behavior in the wild through passive sensing and ways to address these challenges. Finally, we will review the implications of moving this aspect of science forward as it pertains to prevention and treatment of problematic eating, particularly among populations with obesity.

Symposium 17A

ANALYTICS OF EATING: HOW TO BUILD MACHINE LEARNING MODELS OF EATING IN THE WILD

Prof. Nabil Alshurafa, PhD

Wearable sensors combined with computer science machine learning methods have given rise to passive sensing, making it feasible to validly infer in real time physical features of psychological states, such as stress, and appetitive behaviors, such as overeating. The advantage of these real time passive sensing capabilities is their ability to use machine learning models to measure objectively (minimizing self-report bias), precisely (with high sensitivity and specificity), passively (without burden or disruption), and dynamically (detecting rapidly changing states). However, to succeed in passively sensing, people must be willing to wear them, and sensing algorithms must be able to sense eating in the real world. Despite the continuous growth in the wearable market, adherence continues to be impacted by concerns of user privacy, social stigma associated with wearing eating-detection based sensors, and user-comfort. Understanding these concerns will help the wearable community and researchers ultimately improve our ability to design wearables that mitigate these effects, increasing adherence to passive sensing and ultimately paving the way towards personalized behavioral medicine. This talk will present the process of building machine learning models to detect eating in the wild. A study will also be presented aimed at understanding the factors that influence adherence to wearing sensors used to detect eating-habits including a wrist-worn, neck-worn sensor and a camera to validate ground truth in different environments and situations.

Symposium 17B

FROM SENSING TO THEORY: IMPLICATIONS OF CAPTURING NATURALLY OCCURRING BEHAVIORS IN THE WILD

Dr. Angela F. Pfammatter, PhD

Passive sensing technologies have advanced, making possible objective measurement of behaviors once left to be measured solely by self-report. The objective, in the field measurement may lead to deeper insights into human behavior, allowing for progress to be made in our ever evolving behavioral theories. Though passive sensing of behavior has garnered much attention in behavioral medicine, challenges are still pervasive and researchers must heed caution. First, our research has demonstrated significant changes in participant behavior while wearing devices that may not dissipate over time, casting doubt on the hypothesis that participants habituate or forget that they are being watched. Second, we put forth a hybrid theoretical approach to explaining participant behavior in the field while wearing devices that has the potential to guide sensor design to mitigate unintended behavioral changes. Third, findings from traditional behavioral interventions do not always replicate in the digital space, but with more intensive data availability, researchers can now innovate to improve behavioral theories for application in mHealth interventions. Specifically, we have found that while self-monitoring continues to predict behavior change outcomes during mHealth interventions, machine learning approaches have revealed that there might be several mediators to that relationship. Time spent entering data, time spent reviewing progress, and the pattern of use over a week might better predict health behavior changes. Put together, findings from acceptability of sensor wearing, explanatory constructs for unintended changes in user behavior, and insights into effective patterns of mHealth intervention engagement can better inform sensor enabled research to improve accuracy of measurement and improve the effects of our behavioral interventions in the field.

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Symposium 17C

WEARABLE SENSORS FOR DETECTION AND CHARACTERIZATION OF FOOD INTAKE IN THE WILD

Dr. Edward Sazonov, PhD

Food intake provides energy and nutrients to sustain human life. Studying the ingestive behavior of individuals is of particular interest for understanding and treatment of medical conditions strongly associated with food intake, such as obesity and eating disorders. Traditionally, ingestive behavior in humans has been assessed through self-monitoring of food intake. However, this approach is time-consuming and suffers from the observation and misreporting effects. Wearable sensors present a compelling alternative to overcome the limitations of self-reporting methods. These sensors can potentially provide more objective measurements of food intake by monitoring behavioral and physiological phenomena related to one or more stages of the food consumption process: hand-to-mouth gestures, bites, chewing or swallowing. Specialized signal processing and pattern recognition methodologies applied to the sensor signals are used to automatically detect and characterize each intake episodes. Timing, duration of the meals, the mass and volume, caloric and nutritional content of ingested food, and the rate of ingestion could potentially be estimated from sensor data. Furthermore, the sensor-derived measurements of ingestive behavior may inform tailored, real-time interventions aimed at modification of food intake. This talk presents an overview of the wearable sensors and accompanying methodologies that have been proposed for monitoring and modifying ingestive behavior in humans.

Paper Session 1: Advances in Cancer Interventions Across the Cancer Continuum

10:45 AM-11:00 AM

RESULTS FROM THE MOVING FORWARD WEIGHT LOSS INTERVENTION TRIAL WITH AFRICAN-AMERICAN BREAST CANCER SURVIVORS

Melinda Stolley, PhD¹, Patricia Sheean, PhD, RD², Lisa Sharp, PhD³, Alexis Visotcky, MS¹

¹Medical College of Wisconsin, Milwaukee, WI; ²Loyola University Chicago, Maywood, IL; ³University of Illinois at Chicago, Chicago, IL

Purpose. Cancer specific and overall mortality rates are higher among African-American women with breast cancer. Many factors drive these disparities among which obesity and health behaviors may be important, yet modifiable contributors. Obesity is common among African-American women, yet until recently, few weight loss intervention studies targeted African American breast cancer survivors. Weight loss trials with non-Hispanic white women positively impact weight, behavior, biomarkers and psychosocial outcomes. This study examined the effects of Moving Forward, a weight loss intervention for African-American breast cancer survivors (AABCS) on weight, behavior and quality of life.

Methods. Early stage (I-III) AABCS were randomized to a 6-month community-based interventionist guided (n=125) or self-guided (n=121) weight loss program supporting behavioral changes to promote weight loss. Weight, behavioral and PROMIS-10 data were collected at baseline, post-intervention (6 months) and follow-up (12-months). Descriptive statistics and mixed models analyses assessed differences between groups over time.

Results. Mean \pm SD age and BMI were 57.5 ± 10.1 years and 36.1 ± 6.2 kg/m² respectively and 82% had Stage II or III breast cancer. Both groups lost weight. Mean and % weight loss were greater in the guided versus self-guided group (-3.49 (0.39) vs -1.27 (0.40) P<.0001; 3.6% (5.1) vs 1.4% (3.6). Significant post-intervention between group differences were also noted for vigorous physical activity, fiber and added sugar. In addition, the interventionist guided group showed significant improvements in mental and physical functioning compared to the self-guided group (3.0 (6.4) vs 0.6 (6.1)).

Conclusion. The study supports the efficacy of a community-based interventionist guided weight loss program targeting AABCS. Although mean weight loss did not reach the targeted 5%, the mean loss of >3% at 6 months is associated with improved health outcomes. Affordable, accessible health promotion programs represent a critical resource for AABCS.

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Paper Session 1: Advances in Cancer Interventions Across the Cancer Continuum
11:00 AM-11:15 AM

SURVEILLANCE MAMMOGRAPHY ADHERENCE AMONG AFRICAN AMERICAN WOMEN WITH BREAST CANCER: A RANDOMIZED CONTROLLED TRIAL

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Surveillance mammography has important breast cancer survival benefits, yet African American survivors have lower rates of use compared with white survivors. A novel, interactive, computer-based cancer-communication intervention using African American survivor story videos was created for a randomized control trial. African American women diagnosed with first primary breast cancer (stages 0–3) were randomized to either intervention (n=107) or standard care arms (n=120). Patients completed interviews a mean 6 days from surgical post-op visit or start of neoadjuvant therapy (before intervention) and again one month later (after intervention). Two more 2-week video exposures followed at 6 and 12 months after definitive surgical treatment, with follow-up interviews a mean 6.5, 12.7 and 24.5 months later. Demographic, psychosocial, and clinical data were collected by interview and from medical records, and surveillance mammography data were obtained from imaging facilities; adherence was defined as receipt of a mammogram 1 year and 2 years after definitive surgical treatment in eligible patients (i.e., no bilateral mastectomy). Two logistic regression models tested the independent effects of several variables on 1- and 2-year surveillance-mammography adherence. Most eligible patients in both arms received surveillance mammograms at year 1 (99/114 standard care, 89/95 intervention) and year 2 (96/112 standard care, 84/94 intervention). Patients in the intervention arm (vs. standard care) were more likely to receive a 1-year mammogram (odds ratio [OR] 5.77, 95% confidence interval [CI] 1.04–31.97); patients who received single mastectomy (vs. lumpectomy) were less likely to be adherent (OR 0.05, 95% CI 0.003–0.74). The only predictor of adherence to surveillance mammography at 2 years was adherence at 1 year (OR 104.56, CI 14.74–741.83). High rates of adherence to surveillance mammography were observed. Our intervention, which included videos of African American breast cancer survivors describing benefits of mammography, was associated with adherence to the 1-year surveillance mammogram. We interpret our results cautiously as the CIs were wide, likely due to small numbers of non-adherent patients. Other unmeasured variables may be associated with adherence to surveillance mammography in African American breast cancer patients. Further investigation of the reasons for the lower likelihood of surveillance among patients who received a mastectomy is warranted.

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Paper Session 1: Advances in Cancer Interventions Across the Cancer Continuum
11:15 AM-11:30 AM

DIFFUSION OF INNOVATION? UPTAKE OF THE ENGLISH BOWEL CANCER SCREENING PROGRAMME: AN UPDATE AFTER 5 YEARS OF FULL-ROLL OUT

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Background: *Diffusion of innovation (DOI)* theory suggests that the rate with which new technologies are adopted depends on the characteristics of cohorts and will happen over time through social interactions. A previous analysis of the initial roll-out of the English Bowel (Colorectal) Cancer Screening programme (which invites all adults 60–74 to complete a guaiac-based fecal occult blood test every two years), during 2006 and 2009, found uptake to be low (54%) and socially graded by area-level deprivation, ethnic diversity and gender. The current analysis uses data from 2010 (the first year the programme was fully rolled out) to 2015 to test whether uptake is increasing and becoming less socially graded over time.

Methods: Area-level uptake of 4.4 million first-time invitees stratified by gender and year of first invitation (2010–2015) at the postcode district level was generated using the National Bowel Cancer Screening System. Data were limited to first-time invitees aged 60–64. Binomial regression tested for variations in uptake by year of invitation, gender, region, area-based socioeconomic deprivation and area-based ethnic diversity.

Results: Overall, the first-time colorectal cancer screening uptake across six years was 52% (n=2,285,996/4,423,734) with a decline between 2010 and 2015 (53%, 54%, 52%, 50%, 49%, 49% respectively). Uptake continued to be socially graded by area-level socioeconomic deprivation quintiles (41% vs 57%), area-based ethnic diversity (39% vs 57%) and between men and women (47% vs 56%). Multivariate analysis demonstrated effects of year, deprivation, ethnicity and gender on uptake where the effect of deprivation was more pronounced in women in most deprived area quintile (47% vs 40% uptake in the same quintile by men) than least deprived area quintile (62% vs 52% uptake in the same quintile by men). The small temporal decline was observed across all sociodemographic predictors; however, the difference was larger among men, most affluent and least ethnically diverse areas while uptake of the most deprived and ethnically diverse areas remained stable.

Discussion: We did not find evidence of any ‘diffusion’ of CRC screening since its initial launch 10 years ago. Data from the previous 5 years implies that there are structural, and motivational barriers, which are unlikely to be resolved by ‘word of mouth’. There is also a worrying negative trend in uptake particularly among more affluent groups. As it stands, the programme is unlikely to realise its full public health benefits and will ultimately widen inequalities in CRC outcomes.

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Paper Session 1: Advances in Cancer Interventions Across the Cancer Continuum

11:30 AM-11:45 AM

TRUENTH LIFESTYLE MANAGEMENT: FEASIBILITY OF COMMUNITY PHYSICAL ACTIVITY PROGRAMS FOR PROSTATE CANCER SURVIVORS IN CANADA

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Introduction: TrueNTH Lifestyle Management (LM) delivers community-based physical activity (PA) programs to improve the quality of life (QOL) for prostate cancer survivors. Programs were implemented at wellness centres and in academic/clinical institutions in 10 cities across Canada. The current project assessed the feasibility and participant benefits from the 12-week group-based fitness and/or yoga classes designed specifically to address prostate cancer treatment-related side effects.

Methods: Flexible protocols allowed each site to implement a sustainable program that could be adapted according to the setting and available expertise. Instructors were trained in prostate cancer and exercise and provided with structured class plans. Assessments occurred pre and post-intervention, including fitness (i.e. CSEP-PATH, Senior Fitness Test), PA levels (Godin Leisure Time Exercise Questionnaire (GLTEQ)), and patient-reported outcomes (PROs) for QOL and well-being (FACT-P, EQ-5D). Assessments were facilitated by local exercise physiologists.

Results: The mean age was 67 years with 11% on active surveillance, 23% on active treatment, and 66% completed treatment. Treatments included surgery (66%), radiation (32%), hormone (27%), and chemotherapy (5%). Among $n=185$ participants, 69% completed fitness assessments at both time points. Survey measures collected via online methods had only a 12% completion rate while those collected in-person had a 57% completion rate. RM ANOVA's to examine pre to post-program changes showed significant improvements in fitness measures (body composition (BMI, $p=.01$; waist circumference, $p=.02$)), functional aerobic capacity (6-minute walk test, $p=.00$), flexibility (sit and reach, $p=.00$), dynamic balance (8-foot timed-up-and-go, $p=.00$), muscular endurance (push-ups, $p=.00$; 30-second sit-to-stand, $p=.00$); and overall moderate/strenuous PA levels (GLTEQ, $p=.00$). Initially sedentary men reached ACSM guidelines for PA at 12-weeks (GLTEQ, $p=.00$). Trends were seen towards improvements in PROs of well-being and QOL but were non-significant.

Conclusions: The findings from this initial implementation of a national scale initiative indicate that community-based programs are feasible and can be effective on physical fitness outcomes. Future work will examine the host of patient-reported outcomes, as well as longer-term follow up. The goal is to implement sustainable clinic-to-community models for PA programming in prostate cancer care in Canada.

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Paper Session 2: Expanding the Uses and Reach of Digital Health Interventions

10:45 AM-11:00 AM

CAN AN EHEALTH GAMIFIED INTERVENTION MOVE UNDERGRADS FROM “ICK” TO “CLICK” SO THEY DECIDE TO BE AN ORGAN DONOR ON DRIVER’S LICENSE?

Cheryl Lynn Albright, PhD, MPH¹, Kara Saiki, BS, MPH¹, Lynne R. Wilkens, DrPH², Ashley M. Biddle, BA, MA, PhD³, Kami White, MPH¹, Misty Pacheco, MHA, DrPH⁴, Pamela Smith, APRN, RNFA, FNP-BC⁵

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The iDecide Hawaii Project was a multiple baseline, group randomized trial designed to educate, engage, and normalize the choice to be a Designated Organ Donor (DOD) on Department of Motor Vehicles issued drivers' licenses of undergraduates (in most cases the “adult” formatted license for those 21+ years of age). The eHealth intervention included online contests for individual students (e.g., Instagram pictures, YouTube videos) and pledge contests for student organizations with cash prizes for all contests. The website's home page had links based on a visitors' stage of change for deceased organ donation (i.e., “I'm uncomfortable”, “I'm interested”, and an Action stage: “I want to win”). From 2014–2016, across 3 university sites, 20 online surveys were conducted consisting of 9 baselines ($N=2,138$ surveys) and 11 post-tests ($N=2,689$ surveys; Mean age = 22yrs, 75% F, 63% Asian, Native Hawaiian, or Pacific Islander, 31% not religious). There were a total of 63 online contests resulting in 3,742 entrants with 237 winners. Contest entrants were not required to complete a survey and survey respondents were not specifically encouraged to enter contests. Overall, there was no evidence of a pre-post cross-sectional increase in the percentage of students who reported being a DOD after adjusting for age, sex, ethnicity, religion, site, and semester (e.g., Fall, 2016). However, in the longitudinal sample of those who provided a survey pre and post intervention, the percent of students who were a DOD increased from 50.8% at pretest to 52.4% at post ($p = 0.02$). A greater pre-post increase in the percentage of students who were DODs was found (pretest = 37.6% to post = 42.6%, $p < 0.0001$) among respondents who had a probability of being a DOD of less than 50% based on significant host factors (predicted from regression of pretest DOD status on age, sex, ethnicity, college year, religion, and tuition source, to identify those possibly-less likely to be a donor at pretest). Engagement in the gamified eHealth intervention varied by site and type of contest; but, thousands of undergraduates entered contests, each having an organ donation-related theme (e.g., go green and recycle yourself for the “human” environment). Thus, our eHealth intervention engaged undergraduates in a topic that can be unappealing (e.g., “ick” factor) and significantly increased the proportion of DODs following a campus-wide gamified intervention. Examples of contest winners in Instagram and YouTube contests will be presented.

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MERITORIOUS AWARD WINNER
Paper Session 2: Expanding the Uses
and Reach of Digital Health
Interventions 11:00 AM-11:15 AM

IDENTIFYING DYNAMIC DAILY USER ENGAGEMENT WITH
A MOBILE CESSATION APP USING MULTILEVEL LATENT CLASS
ANALYSIS

Christian J. Cerrada, BS, Jimi Huh, PhD
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Introduction: Research on user engagement (UE) has primarily focused on cross-sectional, composite scores of UE that sum across each type of app interaction across time, such as total log-ins. An alternative approach is to examine app interactions longitudinally, which allows researchers to investigate UE in a dynamic fashion. Multidimensional approaches might also help to reveal underlying patterns of UE by examining multiple interaction types concurrently. The present study applies one such approach, multilevel latent class analysis (MLCA), to explore subgroups of daily UE patterns within individuals over the course of a quit attempt.

Methods: A series of MLCA models were conducted to identify distinct subgroups of daily UE patterns (i.e., latent classes), accounting for the repeated data structure. MLCA indicators for this analysis were five unique interactions with a quit app, MyQuit USC (MQU), logged automatically over 28 days. Young adult smokers (n=35) from an ongoing investigation (target N=60) provided a maximum of 980 UE observation days (n=35*28=980). Random means were tested to allow for the probability of belonging to a daily UE class to vary across participants. All analyses were conducted using Mplus v6.

Results: 972 UE observation days were non-missing and used for analysis. The best fitting model yielded a three-class solution for daily UE class membership. Latent classes were distributed as follows: not engaged (45% of the sample), engagement with multiple features (20%), and engagement only with study assessments (35%). All models controlled for individual-level variables, i.e., gender and nicotine dependence. Week in quit attempt was a significant day-level predictor of UE class. Specifically, the probability of belonging to the “engaged with multiple features” class relative to the “not engaged” daily UE class decreased as a function of week in quit attempt (OR=.48, p=.015).

Conclusion: To our knowledge, no studies have applied MLCA to investigate patterns of daily UE nor evaluated day-level predictors of UE in the context of quit attempts. Information regarding the variety of possible daily UE patterns will be useful for devising strategies to optimize and maintain engagement over time with MQU based on individual characteristics and time in quit attempt.

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Paper Session 2: Expanding the Uses
and Reach of Digital Health
Interventions 11:15 AM-11:30 AM

PEOPLE WITH TYPE 2 DIABETES PAYING FOR A ONE DROP | EXPERT
COACH IMPROVE AND MAINTAIN ‘AT GOAL’ BLOOD GLUCOSE

Chandra Osborn, PhD, MPH¹, Lindsay Sears, PhD¹, Mark Heyman, PhD, CDE², David Rodbard, MD³, Rachel Head, RD, CDE¹, Brian Huddleston, JD², Jeff Dachis, MA²

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Objective: People using the One Drop | Mobile app can log and track self-care and health data, get data-driven insights, set goals and monitor progress, give and receive support to/from other users, view tips/recipes, and more. With a paid subscription, a Certified Diabetes Educator (‘Expert’) sends personalized in-app messages to educate, strategize, answer questions, and provide accountability with managing diabetes. An independent company previously tested ‘Mobile’ with ‘Experts’ at no cost to users, and found people with type 2 diabetes (T2D) and A1c $\geq 7.5\%$ had a -0.90% lab A1c improvement at 3 months. Using self-reported, app-collected data, we found an average -29 mg/dL blood glucose (BG) improvement (estimated -1.0% eA1c) among that sample. The present study was designed to test the outcomes of people paying for an ‘Expert’ and the Bluetooth-connected One Drop | Chrome meter with strips. Specifically, we tested changes in objective, app-collected BG among people with a 1st-week average BG ≥ 169 mg/dL (eA1c $\geq 7.5\%$). We also tested the likelihood of having an average BG < 155 mg/dL (eA1c $\leq 7\%$) in week 12 if starting with a 1st-week average BG < 155 mg/dL.

Method: We queried One Drop’s database for people with T2D and an ‘Expert’ for 3 months. Three mixed repeated measures models assessed 1st- to 12th-week change in average BG, percentage of high BGs, and percentage of in-range BGs by coach program (‘On Call’ vs. ‘On Track’). Unadjusted and adjusted logistic regression models tested the likelihood of a 12th-week average BG < 155 mg/dL if the 1st-week average BG was < 155 mg/dL.

Results: The sample (N=290) was 63% male with diagnosed diabetes for 7.1 ± 7.5 years. People (n=107) with a 1st-week average BG ≥ 169 mg/dL (eA1c $\geq 7.5\%$) had a -53.1 mg/dL lower average BG in week 12, $p < .001$, equivalent to a -1.9 lower eA1c. Average percentage of high BGs was -26% lower and in-range BGs $+27\%$ higher, $p < .001$. There was no interaction by coaching program. People with a 1st-week average BG < 155 mg/dL (eA1c $\leq 7\%$) had a higher likelihood (4.1 OR, 4.3 AOR) of maintaining an average BG < 155 mg/dL in week 12.

Conclusion: Among people with T2D paying for an ‘Expert’ and ‘Chrome’ meter with strips, average, objective BG improved among people with an initially elevated average BG, and was maintained for people with a low average BG at baseline. People paying for an in-app coach and meter with strips may be more motivated than someone not paying for these services. More studies employing different methods should evaluate the impact of apps with coaching for people with diabetes.

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Paper Session 2: Expanding the Uses and Reach of Digital Health Interventions

11:30 AM-11:45 AM

TEXT MESSAGE-BASED DIABETES SELF-MANAGEMENT SUPPORT: RESULTS FROM THE SMS4BG RANDOMISED CONTROLLED TRIAL

Rosie Dobson, MSc¹, Robyn Whittaker, PhD¹, Yannan Jiang, PhD¹, Ralph Mad-dison, PhD², Matthew Shepherd, DClinPsy¹, Richard Cutfield, MBChB FRAC³, Catherine McNamara, MD³, Manish Khanolkar, MD⁴, Rinki Murphy, MBChB, PhD¹

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Introduction: Effective diabetes self-management support is key to address the increase in costly and debilitating long-term complications associated with poor diabetes control. Text messages (SMS) are an ideal tool for the delivery of self-management interventions to patients with poorly controlled diabetes given the ubiquity of mobile phones, and the ability of SMS to reach people in their everyday lives when self-management of the condition is crucial. We developed a novel, theoretically based, SMS-based self-management support programme (SMS4BG) for adults with poorly controlled diabetes in New Zealand. The programme addresses the behaviours required for successful diabetes self-management and is made up of modules to allow tailoring of the content. The programme is also tailored to individual patient preferences, demographics, clinical characteristics, and culture. This study investigated the effectiveness of SMS4BG to improve glycaemic control in adults with poorly controlled diabetes.

Methods: A 2-arm, parallel, randomized controlled trial was conducted in adults (16 years and over) with poorly controlled type 1 or type 2 diabetes (HbA1c \geq 65mmol/mol). Participants were recruited across New Zealand and randomised at a 1:1 ratio to receive SMS4BG (intervention) in addition to usual care, or usual care alone (control). The primary outcome was change in glycaemic control (HbA1c) at 9 months. Secondary outcomes include HbA1c at 3 and 6 months, self-efficacy, self-care behaviours, diabetes distress, and health-related quality of life.

Results: Eligible patients (N=366) were randomized to the intervention (n=183) or the control (n=183) group. At 9 months HbA1c was significantly lower in the intervention group compared with the control group (adjusted mean difference, -4.23 [95%CI, -7.30, -1.15], $p=0.01$). Significant improvements in foot care behaviour was seen in the intervention group compared to the control group (adjusted mean difference, 0.85 [95% CI 0.40, 1.29], $p<0.01$), and diabetes related support (adjusted mean difference, 0.26 [95% CI 0.03, 0.50], $p=0.03$). High levels of satisfaction with SMS4BG were found with 95% of participants reporting it to be useful, 97% reporting it to be culturally appropriate, and 97% would recommend SMS4BG to other people with diabetes.

Discussion: This study found that a tailored SMS based self-management support programme is effective at improving glycaemic control in adults with poorly controlled diabetes.

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Paper Session 3: Health Messaging for Chronic Disease Prevention

10:45 AM-11:00 AM

CAN SELF-AFFIRMATION IMPROVE ACCEPTANCE OF HEALTH MESSAGES? - THE ROLE OF INTERNAL VERSUS EXTERNAL THREAT TO THE SELF

Xuan Zhu, PhD

Mayo Clinic, Rochester, MN

Self-affirmation research suggests that allowing people to affirm important values can increase acceptance of health messages and improve health behaviors. Largely unstudied, however, is how variations in message features induce different perceptions of threat to the self, which influences when self-affirmation produces positive effects on message processing. A health message delivering behavioral recommendations through the use of controlling language (e.g., “You must quit smoking”) challenges one’s belief that his/her decision making should be free from outside control. This represents a threat to the self induced by an external force (i.e., external self-threat). In contrast, a message emphasizing the negative outcomes of one’s unhealthy behavior (e.g., “Smoking increases your cancer risk”) contradicts one’s belief that he/she is capable of making wise decisions. This represents a threat to the self induced by one’s own actions (i.e., internal self-threat).

After perceiving an external self-threat from a health message, self-affirmed people will be less receptive of the message than unaffirmed people, because self-affirmation boosts confidence in oneself thus highlighting the intrusiveness of the message. In contrast, after perceiving an internal self-threat from a health message, self-affirmed people will be more receptive of the message than unaffirmed people, because self-affirmation secures self-worth thus easing the discomfort caused by reflecting on one’s unwise decisions.

A 2(Threat type in message: internal, external) by 3(Self-affirmation: value affirmation, control task, message only) between-subjects experiment on fruit and vegetable intake was conducted. Participants were 333 US adults who self-reported not meeting USDA fruit and vegetable intake guidelines.

Among those who read the internal (but not external) self-threat health message, self-affirmation increased intention to meet fruit and vegetable intake guidelines ($F[2, 324] = 3.4, p = .035, \eta^2 = .02$; Affirm: $M = 4.82, SE = .21$; Ctrl: $M = 4.23, SE = .21$; Msg only: $M = 4.44, SE = .19$). Among those who read the external (but not internal) self-threat health message, self-affirmation reduced positive mood ($F[2, 321] = 4.56, p = .011, \eta^2 = .03$; Affirm: $M = 4.61, SE = .19$; Ctrl: $M = 5.23, SE = .18$; Msg only: $M = 5.39, SE = .19$) and increased anger ($F[2, 324] = 3.45, p = .033, \eta^2 = .02$; Affirm: $M = 1.64, SE = .17$; Ctrl: $M = 1.19, SE = .17$; Msg only: $M = .97, SE = .17$).

This study suggests that message features can shape the outcomes of self-affirmation based health interventions. Self-affirmation coupled with a health message signaling external self-threat may lead to undesirable outcomes. Future self-affirmation studies should continue researching the psychological constructs that underlie various message features to further explain when self-affirmation produces positive effects.

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Paper Session 3: Health Messaging for Chronic Disease Prevention 11:00 AM-11:15 AM

FROM MESSAGE TO MOJITO: REACTANCE PATHWAYS AND BINGE DRINKING IN COLLEGE AND NON-COLLEGE EMERGING ADULTS

Bethany Shorey Fennell, M.S., Renee Magnan, PhD

Washington State University Vancouver, Vancouver, WA

One drawback to health communications is greater reactance to the information among those who need it most. Strong messages are rated as more important and expert; however, the clear, controlling language often employed by strong messages is also perceived as more of a threat and elicits more reactance. Much of the work on binge drinking messages has focused on young adult college student populations, with relatively little given to young adults who have never attended college. There is evidence these groups may engage with alcohol use differently. The current examination investigated potential reactance mechanisms through which message strength influences binge drinking intention and behavior among college and non-college emerging adults. As a part of a larger study, participants rated either high or low threat messages about the consequences of binge drinking on three reactance experiences: anger, negative cognitions, and freedom threat. Regression analyses tested the direct and indirect effects using bootstrapping procedures. For college students ($n=348$), anger, negative cognitions, and freedom threat were higher in response to high threat than low threat messages (p s p s) while message threat had no effect on freedom threat ($p=.14$). For college students, there was an indirect effect on binge drinking through cognitive evaluations of the messages ($b=.28, p=.011$). For non-college emerging adults, there was an indirect effect of message threat on binge intentions via cognitive evaluations ($b=.30, p=.009$) and an indirect effect of message threat on binge behavior via anger ($b=.15, p=.012$). These results extend the reach of the current literature on binge drinking communications by demonstrating that age-equivalent college students and emerging adults who have never attended college may respond to anti-binge drinking health messages differently via distinctive reactance pathways. These differences should be taken into account in order to maximize efficacy of future messaging campaigns.

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Paper Session 3: Health Messaging for Chronic Disease Prevention 11:15 AM-11:30 AM

IMPACT OF LOWER ALCOHOL STRENGTH LABELS ON CONSUMPTION OF WINE AND BEER: A BAR LAB RANDOMISED CONTROLLED TRIAL

Milica Vasiljevic, PhD¹, Dominique-Laurent Couturier, PhD¹, Daniel Frings, PhD², Antony C. Moss, PhD², Ian P. Albery, PhD², Theresa M. Marteau, PhD¹

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Background: Labels indicating low/light versions of tobacco and foods are perceived as less harmful which may increase consumption. The current study tests the hypothesis that labelling wine and beer as lower in alcohol increases their consumption.

Methods: Weekly wine and beer drinkers ($n=264$) sampled from a representative panel of the general population of England were randomised to one of three groups to taste test drinks in a bar laboratory varying only in the label displayed: *Group 1*: No verbal descriptors of strength; *Group 2*: verbal descriptor *Low* combined with 8%ABV for wine/3%ABV for beer; *Group 3*: verbal descriptor *Super Low* combined with 4%ABV for wine/1%ABV for beer. Primary outcome was total volume of drink consumed (in ml).

Results: The results supported the study hypothesis: the total amount of drink consumed increased as the label on the drink denoted successively lower alcohol strength, $B=.71, p=.019, [95\%CI 0.11, 1.29]$. Group contrasts showed significant differences between those offered drinks labelled as *Super Low* ($M=213.77$) compared to the drinks labelled as *Regular* ($M=176.85$), $B=1.43, p=.019, [95\%CI 0.24, 2.61]$. There was no significant difference in amount consumed between those offered drinks labelled as *Low* ($M=194.60$) compared to *Regular*, $p=.340$.

Conclusions: These results suggest that labelling drinks as lower in strength increases the amount consumed. Further studies are warranted to test for replication in non-laboratory settings and to estimate the potential for any effects to be at a level with the potential to harm health.

Trial registration: ISRCTN15530806

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MERITORIOUS AWARD WINNER Paper Session 3: Health Messaging for Chronic Disease Prevention 11:30 AM-11:45 AM

AGE OF FIRST SEXUALLY EXPLICIT MEDIA EXPOSURE IS ASSOCIATED WITH RECENT CONDOMLESS SEX AMONG ADULT SEXUAL MINORITY MEN

Nicholas Perry, M.S.¹, Kimberly Nelson, PhD, MPH¹, Jane Simoni, Ph.D.²

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Sexual minority men remain at high risk of HIV infection via condomless anal sex (CAS). Sexual script theory suggests that social messages influence sexual behavior by shaping sexual expectations. However, sexual minority men have few conventional role models of sexual behavior (e.g., peers, popular media). Sexually explicit media (SEM; i.e., pornography) is a possible social influence on sexual minority men's sexual behavior and consumption of SEM has been associated with CAS. SEM messages are especially potent when received at a formative developmental period. However, the impact of early SEM exposure on adult sexuality might be confounded by the well-known effect of early sexual debut on later sexual behavior.

Using data from a cross-sectional online study of SEM use and sexual behavior, we examined the association of age of first SEM exposure with recent CAS among a sample of adult sexual minority men ($N = 1,112$). We hypothesized that earlier SEM debut would be associated with recent CAS, independent of age of anal sex debut. Exploratory analyses tested differences in this association by race/ethnicity and HIV-status to characterize findings within the current HIV epidemic. Men reported demographics, age at first exposure to SEM ($M = 15.1, SD = 6.3$), age of anal sex debut ($M=20.4, SD=7.2$), and CAS over the past three months. Recent CAS was dichotomized due to non-normality. Bivariate and multivariable logistic regression models were run.

Over half the sample (56%) reported recent CAS. Age of SEM exposure was negatively associated with recent CAS. Specifically, every one-year increase in age of first SEM exposure was associated with decreased odds of recent engagement in CAS ($OR=.97, [95, .99], p=.01$). This association remained when controlling for age of anal sex debut ($AOR = .98, [96, 1.00], p=0.03$). We did not find significant differences in the strength of this association by race/ethnicity or HIV status ($p=.55; p=.70$).

Men who are exposed to SEM later in life were less likely to engage in sexual risk behaviors. These findings did not vary by racial identity or HIV-status in our sample, and remained significant controlling for age of anal sex debut. For many sexual minority men, early exposure to SEM may have a durable effect on adult sexual behavior. Future research should examine processes linking early SEM exposure to sexual development and later engagement in riskier sex for sexual minority men.

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CITATION AWARD WINNER
Paper Session 4: Community-Based
Interventions to Support Weight Loss and
Physical Activity 10:45 AM-11:00 AM

RACE DIFFERENCES IN WEIGHT GAIN AMONG A COMMUNITY SAMPLE OF SMOKERS RECEIVING A MULTIPLE BEHAVIOR CHANGE INTERVENTION

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Introduction: Racial disparities have been reported in post-cessation weight gain, with African American smokers gaining excessive weight. These findings have been seen primarily in observational research; few studies have compared weight in multiethnic smokers receiving evidence-based treatment in a community setting. We examined race differences in short-term weight gain during an intervention to foster smoking cessation plus weight management.

Methods: Data were drawn from a randomized controlled trial testing the effect on cessation and weight gain prevention of adding weight control intervention either simultaneously with or sequentially after smoking cessation treatment delivered via telephone quitlines. African Americans (n=667) and whites (n=1721) self-reported smoking status and weight during each of 10 intervention calls focused on either cessation (all groups), weight management (sequential), both cessation and weight (simultaneous), or healthy living (control, simultaneous). Random effects longitudinal modeling was used to test the association of race and smoking on weight change over the intervention period (an average of 16 weeks).

Results: Abstinence predicted weight gain over the intervention period ($\beta=0.199$, $SE=0.089$, $p=0.03$); there was no effect of intervention over time. Race was not associated with weight gain or the association between smoking and weight. There was a significant race x treatment x time effect, such that, in the simultaneous group, weight increased for African Americans at a faster rate compared to whites ($\beta=0.295$, $SE=0.127$, $p=0.02$), independent of smoking status, age, baseline obesity, and education.

Discussion: No race differences in overall weight gain were observed. However, African Americans receiving smoking and weight content simultaneously demonstrated an increase in weight compared to whites in the same group. As previous research has shown lower engagement and abstinence rates in simultaneous interventions, future studies are needed to understand factors associated with treatment receptivity that may influence weight among multiethnic smokers.

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CITATION AWARD WINNER
Paper Session 4: Community-Based
Interventions to Support Weight Loss and
Physical Activity 11:00 AM-11:15 AM

PHYSICAL ACTIVITY AND PSYCHOSOCIAL OUTCOMES FROM A PILOT RANDOMIZED TRIAL OF AN IVR-SUPPORTED INTERVENTION IN THE DEEP SOUTH

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Background: The American Cancer Society recommends ≥ 150 minutes of moderate-intensity aerobic physical activity per week to reduce cancer risk. Most Americans are sedentary, especially in the South, where cancer incidence and mortality rates are generally higher. Telephone-based physical activity interventions can help reduce intervention barriers in this region (literacy, costs, lack of transportation/expensive technology, distance from facilities) and can be automated via Interactive Voice Response (IVR) systems for improved reach and cost-effectiveness. The purpose of the current study is to report the outcomes (feasibility, acceptability, preliminary efficacy) of the 12-week Deep south IVR-supported Active Lifestyle (DIAL) intervention.

Methods: A randomized controlled trial was used to test the 12-week, Social Cognitive Theory-based DIAL intervention (N=32) vs. a Waitlist Control arm (N=31). Physical activity (7-Day Physical Activity Recalls) and psychosocial measures were administered at baseline and 12 weeks.

Results: The sample included underactive adults from Birmingham, AL. The mean BMI was 31.1 kg/m² and mean age was 43 years old. A majority of the participants were male (55.6%) and African American (58.7%). Retention was high at 12 weeks (88.89%). Adherence to intervention protocol was adequate, with 62% calling the IVR system on at least 63 of the 84 required days ($\geq 75\%$ adherence) and 86.2% completing at least 2 of the 3 required monthly counseling calls. Intervention participants reported being satisfied or very satisfied with the DIAL program (71.43%) and would recommend it a friend (92.86%). Moreover, participants found the DIAL automated telephone system easy to use (85.71%). As for preliminary efficacy, self report moderate-vigorous intensity physical activity increases at 12 weeks were significantly greater for the DIAL intervention arm (M= +74.4 minutes/week, SD=80.8) vs. the waitlist control arm (M=+47.9 minutes/week, SD=109.6), $p < .001$. Moreover, the intervention produced significantly greater increases in physical activity self-regulation ($p < .001$) and social support from family ($p = .001$) and friends ($p = .009$) from baseline to 12 weeks, compared to a waitlist control. Significant decreases in sleep disturbance from baseline to 12 weeks were also found in the intervention arm and not the control arm, $p < 0.05$.

Discussion: Findings support the feasibility, acceptability, and preliminary efficacy of the DIAL intervention. Next steps include intervention refinement in preparation for a fully-powered efficacy trial and eventual dissemination in rural counties.

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Paper Session 4: Community-Based Interventions to Support Weight Loss and Physical Activity 11:15 AM-11:30 AM

FAMILY FUNCTIONING, SOCIAL SUPPORT, SELF REGULATION & SELF EFFICACY IN A SPOUSAL SUPPORT WEIGHT LOSS INTERVENTION FOR BLACK MEN

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Black men demonstrate significant disparities in morbidity and mortality caused by top chronic diseases related to weight. Yet, few management studies include sufficient data on Black men to enable evaluation of their behaviors and weight outcomes. Together Eating & Activity Matters (TEAM) was a 12-week randomized controlled pilot study for weight loss among Black men testing whether enhancing a standard behavioral intervention by adding a spousal support component produced greater weight loss than the standard behavioral weight loss treatment alone. Mean (SD) weight changes over 3 months among men were -3.4[.04] and -4.7[5.9] kg and among female partners -0.23[4.46] and -2.47[3.62], in the standard and enhanced groups, respectively. This secondary analysis of data from this pilot study focused on whether including spousal support (Enhanced) within the intervention changed the theory-based constructs of family functioning (i.e., communication, family cohesion, emotional involvement), social support, self-regulation, and self-efficacy. We collected self-report data from 40 Black men randomized to the standard (n=19) or the enhanced (n=21) behavioral weight loss treatment. Exploring moderate effect sizes to represent differences between groups, the enhanced group showed increased communication (standard: -0.17 ± 0.60 ; enhanced: 0.23 ± 0.65 , $d=0.64$, $p=0.06$) and incendiary communication (standard: -0.55 ± 2.43 ; enhanced: 0.52 ± 2.43 , $d=0.44$, $p=0.19$) and decreased family cohesion (standard: 1.77 ± 5.38 ; enhanced: -2.33 ± 5.38 , $d=0.76$, $p=0.06$) and emotional involvement (standard: 1.12 ± 3.68 ; enhanced: -1.70 ± 3.59 , $d=0.77$, $p=0.04$) compared to the standard group. There were no differences between groups on other measures. Thus, although the pilot study showed that participating with a partner produced an additional 1 kilogram of weight loss in the men ($d=0.18$) and 2 kgs in their partners compared to the standard weight loss treatment, the spousal support-enhanced intervention, which focused on spousal communication, caused unexpected negative changes in couple functioning on some measures. Changes in these communication variables should be replicated in a larger sample and studied over a longer period of time to determine if the effects are transient or sustained.

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Paper Session 4: Community-Based Interventions to Support Weight Loss and Physical Activity 11:30 AM-11:45 AM

DESIGNING FIT WITH FAITH: AN EHEALTH INTERVENTION FOR CLERGY AND THEIR SPOUSES

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Introduction: Clergy and their spouses are influential leaders in their communities. They are often asked to promote and model healthy behaviors. Unfortunately, clergy experience higher rates of obesity and other chronic diseases compared to non-clergy. Clergy also report lifestyles that make it difficult for them to participate in traditional health promotion programs. An eHealth program may be an effective strategy for providing clergy and their spouses with resources needed to improve lifestyle behaviors.

Objective: To identify factors necessary for an effective clergy/spouse health promotion program. To examine the potentially unique health needs of male clergy within the greater Memphis, TN area.

Methods: Three focus groups were conducted with 18 male clergy and an additional three groups with 14 spouses. Focus group data were analyzed in NVivo using a grounded theory approach.

Results: Clergy and spouses expressed the need for clergy specific interventions with sex-specific components in order to feel safe and understood when sharing health struggles. Additional themes included: 1) A need for diet, physical activity, and role-related stress management tools; 2) A desire for structure in the form of meal plans, goal setting, and accountability; 3) Technology was viewed as a way to overcome the barrier of time, assist with tracking behaviors, provide accountability, and opportunities for competition; 4) Various technologies were deemed appropriate, but opportunities for face-to-face support were also requested.

Conclusion: Based on these findings, the Fit with Faith intervention will use a diet and physical activity tracking app, educational and skill building website materials, individual and family challenges, and opportunities for group and individual counseling to aid participants in improving their diet, physical activity, and stress reduction behaviors. Research is still needed to understand the health needs of female clergy and their spouses.

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Paper Session 5: Extending Our Global Reach: Advances in Global Behavioral Health

10:45 AM-11:00 AM

ASSOCIATIONS BETWEEN PARENTING BEHAVIORS AND CHILDREN'S SOCIAL-EMOTIONAL, BEHAVIORAL, AND COGNITIVE WELL-BEING IN LIBERIA

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Purpose. Research has identified parenting behaviors associated with children's well-being in high-income countries, but the literature is weak in low- and middle-income countries. We examine associations between harsh discipline and parent-child relationship quality with children's social-emotional, behavioral, and language development in Liberia.

Methods. Participants were 204 caregivers and their children aged 3 to 4 years. Harsh discipline was assessed with the Discipline Interview. Relationship quality was measured with the Parental Acceptance-Rejection Questionnaire (PARQ) and a locally-derived positive interactions scale. Child outcome measures included: the Ages and Stages Questionnaire: Social-Emotional (ASQ:SE); the Strengths and Difficulties Questionnaire (SDQ); and a locally-derived measure of disruptive behavior. Receptive language was assessed with locally-derived story comprehension and instruction-following tasks. Linear regression was used to test associations, controlling for gender and age of caregivers and children, as well as caregiver education level.

Results. Harsh discipline was associated with worse child outcomes on all measures: poorer scores on the ASQ:SE ($F(6,196) = 2.6, p < 0.01$), more problems in social, emotional, and behavioral domains on the SDQ ($F(6,196) = 8.9, p < 0.001$), and more problem behaviors ($F(6,196) = 8.0, p < 0.001$). Harsh discipline also was negatively associated with scores on story comprehension ($F(6,196) = 8.4, p < 0.10$) but not on the instructions task.

Associations between relationship quality and child well-being varied. On the locally-derived positive interactions scale, quality was related to better functioning on the ASQ:SE ($F(6,196) = 5.2, p < 0.001$) but not on the SDQ or problem behavior scale. Surprisingly, positive interactions were associated with worse performance on story comprehension ($F(6,196) = 8.8, p < 0.05$) and the instructions task ($F(6,196) = 5.8, p < 0.01$). On the PARQ, rejection was associated with worse scores on the ASQ:SE ($F(6,196) = 7.6, p < 0.001$), SDQ ($F(6,196) = 13.3, p < 0.001$) and problem behavior scale ($F(6,196) = 10.4, p < 0.001$). Associations with verbal abilities were in the expected direction, but not statistically significant.

Conclusions. Harsh discipline and rejection emerged as risk factors for poorer child well-being. Results were mixed on associations between parenting and verbal ability and between positive interactions and child wellbeing. Results suggest the need to target harsh discipline in interventions and highlight the importance of more diffuse negative relationship characteristics that may deserve more attention in intervention research.

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Paper Session 5: Extending Our Global Reach: Advances in Global Behavioral Health

11:00 AM-11:15 AM

CLUSTERING OF MULTIPLE HEALTH RISK BEHAVIORS AMONG YOUNG ADULTS IN AUSTRALIA: A LATENT CLASS ANALYSIS

Katrina E. Champion, BA Psych(Hons), PhD¹, Nicola C. Newton, PhD², Marius Mather, BA Psych(Hons)², Bonnie Spring, PhD¹, Maree Teesson, BSc Psych(Hons), PhD²

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Six key risk behaviors (physical inactivity, diet, smoking, alcohol use, sedentary behavior and sleep) have been associated with risk of chronic disease, such as cardiovascular disease and cancers. These risk behaviors ("Big 6") commonly co-occur and typically emerge in adolescence and early adulthood, a critical transitional period characterized by greater autonomy over lifestyle choices. An examination of the clustering of these behaviors is important for guiding the development of multiple health behavior interventions to prevent chronic disease. This study aimed to investigate the clustering of the "Big 6" among young adults in Australia, and examine how the clusters relate to mental health and socio-demographic factors. A total of 350 participants ($M_{age} = 18.8$ yrs, 68% male) completed an online self-report survey assessing the six behaviors (binge drinking and smoking in the past 6 months, moderate-to-vigorous physical activity/week, sitting time/day, fruit and vegetable intake/day and sleep duration/night). Engagement in each behavior was represented by a dichotomous variable reflecting adherence to national guidelines. Clusters were identified using latent class analysis and associations with psychological distress, anxiety, depression, gender, employment, and tertiary education were examined via chi-square analysis and ANOVAs. Three distinct classes emerged: 'Poor diet, nonsmokers' [nonsmokers, highly likely to meet sleep, physical activity and sedentary behavior guidelines, moderately likely to binge drink and not eat enough fruit and majority have poor vegetable intake; Class 1, 64%]; 'Binge drinkers and smokers' (majority binge drink, smoke and have poor vegetable intake, but highly likely to meet fruit, sleep, physical activity and sedentary behavior guidelines; Class 2, 24%) and 'High risk' (high rates of smoking and binge drinking, poor fruit and vegetable intake and comparatively high rates of sedentary behavior; Class 3, 12%). There were no significant socio-demographic differences between the classes, however there were significant differences in terms of psychological distress [$F(2,347) = 10.29, p < .001$], anxiety [$F(2,347) = 4.99, p = .01$], and depression [$F(2,347) = 7.95, p < .001$]. Specifically, the 'high risk' class had significantly greater psychological distress ($p < .000$) and depression ($p = .01$) than the other classes, and higher anxiety ($p = .01$) than 'poor diet, nonsmokers'. These results indicate that health risk behaviors cluster in young Australian adults and covary with mental ill health. Findings reinforce the importance of delivering multiple health interventions to reduce later chronic disease risk and to improve current mental wellbeing.

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**Paper Session 5: Extending Our Global Reach:
Advances in Global Behavioral
Health** 11:15 AM-11:30 AM

TRAINING MH PROFESSIONALS IN LMICS TO DELIVER LIFESTYLE INTERVENTIONS FOR PEOPLE WITH MENTAL ILLNESS: A PILOT PROJECT IN UGANDA

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Background: The prevalence of non-communicable diseases (NCDs) is rapidly rising in low income countries. People with mental illness living in low-income countries represent a particularly vulnerable population at risk of developing non-communicable diseases secondary to mental illness. Physical inactivity, poor diet quality and smoking are key modifiable risk factors. Robust evidence demonstrates that targeting these modifiable risk factors can reduce symptoms of mental illness. Implementation of targeted lifestyle interventions within mental health services in high-income settings remains ad-hoc, with a dearth of literature guiding adaptation of programs to low-income settings. We aimed to train mental health professionals from a psychiatric hospital in Uganda, in the principles of lifestyle interventions.

Methods: A one-day workshop for mental health staff (primarily clinical psychologists) was conducted in July 2017. The workshop covered topics including the rising prevalence of NCDs, cardiometabolic health of people with mental illness, staff culture, assessing and reporting on physical health outcomes, principles of exercise and dietary prescription and medical management of mental disorders. Outcomes assessed included the Metabolic Barriers, Attitudes, Knowledge and Confidence questionnaire (M-BACK).

Results: In total, n=39 clinical psychologists attended the workshop. N=29 completed pre- and post questionnaires. Total mean M-BACK scores increased from 56.1 (SD=5.6) to 65.1 (SD=7.3), $p=0.064$. 100% of respondents reported that the workshop was effective in increasing understanding of the importance of addressing physical health of people with mental illness.

Conclusion: A one-day training workshop was feasible, acceptable and effective in improving the knowledge and confidence of mental health professionals regarding the physical health and delivery of lifestyle interventions for people with a mental illness in a low-resource setting.

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**Paper Session 5: Extending Our Global Reach:
Advances in Global Behavioral
Health** 11:30 AM-11:45 AM

INCREASING UPTAKE OF VOLUNTARY MEDICAL MALE CIRCUMCISION IN ZAMBIA: PRELIMINARY REGIONAL RESULTS

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Background. Voluntary medical male circumcision (VMMC) uptake in Africa could prevent 3.4 million HIV infections across a 10-year span and is an effective strategy for HIV prevention in high-prevalence populations. Despite high levels of HIV protection, ~80% of uncircumcised men in Zambia express *no* interest in undergoing VMMC. The Spear & Shield (S&S) intervention has been shown to be 2.4 times more effective than control and 8.5 times more effective than observation-only conditions at increasing the number of VMMCs among Zambian men with no prior interest in undergoing the procedure. This paper examines the initial impact of scale up of the S&S VMMC dissemination and implementation science program.

Methods. Three Community Health Center (CHC) medical staff (n = 72) from each of 24 CHCs in Lusaka Province were trained to perform VMMC, and four CHC counselors from each CHC were trained to conduct the S&S intervention for CHC attendees. The 24 CHCs were divided into two groups of 12 CHCs to 1) provide VMMC *and* four weekly S&S intervention sessions on HIV prevention highlighting VMMC (“immediate”), or 2) provide VMMC only for the first 6 months, i.e., “*delayed*” S&S intervention onset for 6 months to determine the impact of providing VMMC services alone. The percentage of men testing HIV- *and* electing to undergo VMMC at each clinic was compared with VMMC percentages over 12 months prior to study onset (i.e., historical control).

Results. At 15 months post-intervention onset, there were no differences between immediate S&S intervention and the delayed intervention onset arm ($b = -0.003$, 95% CI = $-0.047, .030$) during the post-intervention period. In contrast, average rates of changes (slope) in VMMC uptake in the intervention arm significantly increased ($b = .021$, 95% CI = $0.001, 0.044$) compared to historical data (0.014 and 0.035 for historic and intervention periods, respectively).

Discussion. Preliminary results of this ongoing study suggest that the intervention arm positively impacts rates of VMMC uptake. However, the comparison of “*delayed*” CHCs (VMMC only) vs. 12 “*immediate*” CHCs (VMMC plus S&S intervention) to assess the impact of offering VMMC only for the initial 6 months was premature; additional data from the remaining 3 Provinces will provide a more definitive comparison of these two conditions. Program adjustments based upon these initial implementation and dissemination findings will be discussed.

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MERITORIOUS AWARD WINNER
Paper Session 6: Supporting the Health of
Aging Adults 10:45 AM-11:00 AM

DOES GENDER MODERATE THE ASSOCIATION BETWEEN PARTNER SUPPORT AND PHYSICAL ACTIVITY AMONG INDIVIDUALS WITH OSTEOARTHRITIS?

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Purpose. Most individuals with knee or hip osteoarthritis (OA) are not meeting recommendations for physical activity (PA). Of the potential sources of influence on PA, cohabitating partners likely play an important role given that PA often occurs in the presence of or with the support of others. Research shows that women tend to provide higher quality social support than men and individuals tend to prefer the support provided by women versus men. The purpose of this study was to examine the moderating role of gender on the association between partner support for PA and light, moderate, and vigorous PA (LMVPA) among individuals with OA.

Methods. Baseline data were collected from 170 insufficiently active (<150 minutes of moderate-vigorous PA) adults with OA of the knee(s) and/or hip(s) and their partner. All couples were heterosexual. Objective LMVPA was assessed using accelerometers. Positive and negative partner support for PA was examined in the following categories: a) partner joins in activity, b) partner communicates support for activity, c) partner is critical of activity, and d) partner expresses concern over activity. Linear regression models were evaluated for each type of partner support, adjusting for gender and socio-demographic covariates including age, race, education, employment, and income. Interactions between gender and each category of partner support were tested, and if statistically significant ($p < 0.05$), simple slopes for men and women were probed.

Results. Participants were on average 66 years old ($SD=9$), 65% female, and 86% Caucasian. Across adjusted models, women engaged in more weekly minutes of LMVPA than men and having a partner who was critical of PA was associated with fewer minutes of LMVPA ($\beta = -0.19$, $p = 0.02$). Gender moderated the relation between partner communicating support for activity and LMVPA ($\beta = -0.53$, $p = 0.01$). More partner support was associated with more minutes of LMVPA among men ($\beta = 0.24$, $p = 0.07$) but fewer minutes of LMVPA among women ($\beta = -0.20$, $p = 0.04$).

Discussion. Findings support theoretical and empirical evidence that interpersonal factors play an integral role in PA. Further investigation is needed to understand how women differ from men in their provision of positive communication support for PA to explain why men benefited from this type of support but women did not. Future interventions should test strategies for improving communication support from men to promote PA in women with OA.

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Paper Session 6: Supporting the Health of Aging
Adults 11:00 AM-11:15 AM

INSTRUMENTED TRAIL-MAKING TASK (iTMT) TO IDENTIFY PHYSICAL FRAILTY - PROOF OF CONCEPT STUDY

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Background: While timed gait speed tests are strong predictors of physical frailty, they are often impractical for busy settings. A non-walking based tool sensitive to physical frailty, may facilitate such assessments irrespective of setting.

Objective: We proposed a wearable platform, the instrumented trail-making task (iTMT), to quantify both cognition (working memory) and motor (ankle motion) function consisting of an ankle reaching test. We examined the accuracy of the iTMT to determine presence of major frailty phenotypes including slowness, weakness, exhaustion, and low activity.

Methods: The iTMT uses an ankle-worn sensor, which transmits the ankle motion as movement on a computer cursor. The iTMT mirrors the trail-making test by navigating the cursor to five targets indexed with numbers or letters in the correct order. Thirty-five older subjects (age=76.7 ± 9.5 years, body mass index=26.6 ± 5.7 kg/m², male=51.4%) were recruited to validate this platform. According to the Frailty Phenotype by Fried et al., 15 subjects were determined as non-frail, 15 as pre-frail, and 5 as frail. In addition, 17 young-healthy subjects (age=29.7 ± 8.2 years, body mass index=26.1 ± 4.7 kg/m², male=58.8%) were recruited to establish a healthy benchmark. The ankle-sensor allows quantifying ankle-velocity (surrogate for slowness) and its decline during the test (surrogate for exhaustion), ankle jerkiness (surrogate for activity inefficiency), and the time consumed to reach all targets in the correct sequence (surrogate for poor cognition and/or weakness).

Results: The iTMT parameters were able to identify presence of slowness (*Cohen's* $d=1.15$, $p=0.015$), weakness ($d=0.81$, $p=0.041$), exhaustion ($d=1.56$, $p=0.025$), and low activity ($d=0.99$, $p=0.008$). Among these iTMT parameters, the average iTMT ankle-velocity in young-healthy, elderly non-frail, pre-frail, and frail groups were 5.9 ± 0.9 unit/s, 4.7 ± 0.7 unit/s, 4.0 ± 0.7 unit/s, and 3.2 ± 0.8 unit/s ($pd=1.04-3.14$ to discriminate between groups. High correlations were observed between the iTMT ankle-velocity and measures of gait velocity, grip force, and dual-task cost ($r=0.627-0.738$, $p<0.001$).

Conclusions: This study demonstrated that the iTMT platform is able to identify frailty phenotypes using a quick non-walking based test. This may facilitate routine assessment of physical frailty irrespective of setting. Results need to be confirmed in larger samples.

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Paper Session 6: Supporting the Health of Aging Adults 11:15 AM-11:30 AM

DO INFORMAL CAREGIVERS KNOW WHEN A PATIENT IS DEPRESSED? A STUDY OF PATIENTS WITH HEART FAILURE AND THEIR CARE PARTNERS

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Background: More than 1 in 5 patients with chronic heart failure (CHF) experiences co-occurring depression. Among adults with CHF, depressive symptoms are associated with poorer quality of life and higher rates of mortality, morbidity, and re-hospitalization. Yet, depression is under-diagnosed and under-treated among patients with CHF. Social network members such as spouses, adult children, or friends have regular contact with patients and frequently accompany patients to their medical appointments. Consequently, these Care Partners (CPs) may be well-positioned to help CHF patients and their healthcare providers identify depressive symptoms. To understand the extent to which CPs could serve as a source of information about patients' mood, we examined concordance between patients' self-reported depressive symptoms and their CPs' impressions perceptions of the same symptoms.

Methods: The study used baseline data from 201 non-cohabitating patient-CP dyads participating in a randomized trial of CP support. Depressive symptoms were measured using the Center for Epidemiological Studies-10 (CESD). Correspondence correlations (CCs) and difference scores (CP estimate of patient CESD score – patient CESD score) were used to assess patient-CP agreement on depressive symptoms. ANCOVA was used to examine variation in CESD differences scores across CP characteristics, adjusting for CP depressive symptoms and patients' total cardiovascular comorbidities.

Results: The median difference in patient reported CESD score and CP estimated CESD scores was 0 (interquartile range: -5 to +5 points). Patient-CP dyads demonstrated fair concordance on ratings of patient depression ($CC = .32$, 95%CI: 0.22, .44). Female CPs estimated patients' CESD scores ($p = .004$) more accurately than male CPs, who significantly overestimated patients' CESD scores ($M_{diff} = 2.50$, 95%CI: 0.60, 4.41). CPs living less than five miles from the patient significantly overestimated the patient's CESD score compared to CPs living farther away ($p = .004$). CPs' education, frequency of contact, and relationship with the patient did not predict accuracy, $p > .05$.

Conclusion: CPs living outside patients' homes are relatively accurate in their assessment of patients' depressive symptoms, and could serve as an additional source of information for providers when assessing depression among patients with CHF. Male CPs and CPs living within five miles of patients may tend to overestimate patients' depressive symptoms.

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Paper Session 6: Supporting the Health of Aging Adults 11:30 AM-11:45 AM

USE OF THE PROMIS DEPRESSION MEASURE IN PATIENTS WITH HEART FAILURE

Kenneth E. Freedland, PhD¹, Robert M. Carney, PhD¹, Michael W. Rich, MD¹, Eugene H. Rubin, MD²

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Background: The Patient-Reported Outcomes Measurement System (PROMIS) is the product of an NIH Roadmap initiative. It used state-of-the-art psychometric methods to improve the assessment of patient-reported outcomes. Research is needed on the use of PROMIS measures in specific clinical populations. This study evaluated the agreement between the PROMIS Depression measure and the Beck Depression Inventory (BDI-II) in patients with heart failure.

Methods: Outpatients (n=158) with New York Heart Association Class I-III heart failure and comorbid major depression were enrolled in a randomized controlled trial of a cognitive-behavioral intervention. The BDI-II was the primary outcome measure; the PROMIS Depression scale was a secondary outcome. In addition, the PROMIS crosswalk was used to estimate BDI-II scores from PROMIS Depression scores. Bland-Altman analysis was used to evaluate the agreement between the measures at baseline.

Results: The PROMIS Depression scale correlated $r=0.55$ ($p<.05$) with the BDI-II. However, the interval of agreement on the Bland Altman raw score plot was +/-14 points (42%). The predicted BDI-II score (i.e., predicted by the PROMIS crosswalk) correlated with the observed BDI-II score $r=0.57$ ($p<.05$). With respect to the estimated bias, the observed BDI-II score was 3.2 points higher than the PROMIS-predicted (crosswalk) score. The upper and lower limits of agreement were 37 points apart.

Conclusions: BDI-II scores cannot be accurately estimated from the PROMIS Depression crosswalk in patients with heart failure and comorbid major depression. Further research will be needed to evaluate the utility of the PROMIS measures in patients with heart failure.

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Paper Session 7: Revisiting the Role of Pain in Behavioral Medicine

10:45 AM-11:00 AM

CHALLENGES AND OPPORTUNITIES IN OPIOID RISK MITIGATION ACROSS MILITARY, VETERAN, AND CIVILIAN HEALTH SYSTEMS

Erin Finley, PhD, MPH¹, Suyen Schneegans, MA², Lauren Penney, PhD³, Mary Jo Pugh, PhD, RN³, Joseph Maddry, MD⁴, Megan Curtis, MA⁵

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Background: Amid the ongoing U.S. opioid crisis, achieving significant change in opioid-related morbidity and mortality is likely to require multi-level efforts across health systems, including the Department of Defense (DoD), Department of Veterans Affairs (VA), and civilian sectors. We conducted a series of focus groups with national experts to identify core challenges and elicit recommendations toward increasing the safety of opioid prescribing in the U.S., including through use of clinical decision support (CDS).

Methods: We invited a panel of national experts to participate in a series of focus groups to discuss (a) challenges in opioid risk mitigation, (b) how best to support providers in safe and appropriate opioid prescribing across DoD, VA, and civilian healthcare systems, and (c) the role of CDS. Six focus groups were conducted via teleconference with 18 experts, 13 of whom participated in two groups occurring on separate days, allowing for in-depth, extended discussion. Transcripts were coded using grounded theory, resulting in generation of a summative framework describing the current climate of opioid prescribing and suggestions for targeted solutions.

Results: Eighteen experts representing primary care, emergency medicine, psychology, pharmacy, and public health/policy participated. Participants described a wide variety of challenges related to reducing opioid risk, including aspects of the current national climate, as well as challenges and opportunities specific to DoD, VA, and civilian healthcare sectors (e.g., high mobility among patients and providers in the military), and common barriers to safe opioid prescribing and use at the provider and patient levels. Participating experts identified recommendations for national-, system-, clinic-, provider- and patient-level change efforts spanning policy, research, education, and organization of health care delivery. CDS was identified as an important component of a comprehensive opioid risk mitigation strategy via (1) increasing integration of information across often-fragmented systems and (2) supporting providers in identifying and treating patients at increased risk for opioid misuse.

Discussion: Reducing opioid risk while ensuring safe and effective pain care, according to participating experts, is likely to require multi-level efforts spanning military, veteran, and civilian healthcare systems. CDS should be considered a core tool in this effort, accompanied by efforts to increase education for patients and providers, increase access to non-pharmacologic pain care, and support use of existing CDS, including state-level prescription drug monitoring programs.

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Paper Session 7: Revisiting the Role of Pain in Behavioral Medicine

11:00 AM-11:15 AM

CHANGES IN PAIN INTENSITY FOLLOWING DISCONTINUATION OF LONG-TERM OPIOID THERAPY

Travis Lovejoy, PhD, MPH¹, Crystal L. Smith, M.S.², Steven K. Dobscha, M.D.¹, Benjamin Morasco, PhD¹, Thomas Meath, MPH³, Michael Demidenko, BS⁴, Sterling McPherson, M.S.; Ph.D.⁵

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Background: Recent trends in opioid prescribing suggest fewer new opioid prescriptions and increased discontinuation of opioids for patients prescribed long-term opioid therapy (LTOT). However, consequences of opioid discontinuation, including its impact on patient-reported outcomes of pain intensity, are unknown.

Objective: To characterize changes in pain intensity in the year following LTOT discontinuation.

Methods: Retrospective electronic health record data were obtained from a national sample of N=600 U.S. Department of Veterans Affairs (VA) patients who discontinued LTOT in 2012. Data included demographic and clinical characteristics of the sample, as well as patient-reported pain intensity ratings obtained during routine outpatient clinical encounters in the year prior to and following opioid discontinuation.

Analysis: Latent growth models characterized the average pain trajectory across the entire sample, while growth mixture models delineated distinct pain trajectory sub-classes.

Results: Average pain at the time of opioid discontinuation was 4.9 on a scale of 0 (“no pain”) to 10 (“worst pain imaginable”). Several different growth curves were fit to the data to account for the possibility of curvilinear pain score trajectories. However, the best fitting model was linear, characterized by slight but statistically non-significant declines in pain over the 12-month post-discontinuation period ($B=-0.179$, $SE=0.142$, $p=0.208$). Pain at the time of LTOT discontinuation varied widely between patients suggesting the possibility of distinct pain trajectory sub-classes. Follow-up growth mixture models identified four sub-classes: sub-clinical pain (30% of the sample; average pain at discontinuation=0.054), mild clinically-significant pain (17%; average pain=3.590), moderate clinically-significant pain (27%; average pain=5.972), and severe clinically-significant pain (26%; average pain=7.827). Similar to the overall sample, pain trajectories in each of the four sub-classes were characterized by slight reductions in pain over time, with patients in the mild and moderate pain trajectory categories experiencing the greatest pain reductions post-discontinuation ($B=-0.106$, $SE=0.053$, $p=0.046$ and $B=-0.113$, $SE=0.055$, $p=0.041$, respectively).

Conclusions: Pain intensity following discontinuation of LTOT does not, on average, worsen for patients and may slightly improve, particularly for patients with low-to-moderate pain at the time of discontinuation.

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Paper Session 7: Revisiting the Role of Pain in Behavioral Medicine

11:15 AM-11:30 AM

ARE PAIN-RELATED OUTCOME EXPECTANCIES ASSOCIATED WITH SMOKING CESSATION OUTCOMES AMONG PEOPLE WITH MOBILITY IMPAIRMENTS?

Romano Endrighi, PhD¹, Elizabeth M. Glowacki, PhD², Nicolle Rueras, MPH¹, Shira Dunsiger, PhD³, Belinda Borrelli, PhD²

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Research indicates that smokers with chronic pain (CP) are less likely to quit smoking. People with Mobility Impairments (MI; use equipment to ambulate) have a high prevalence of both smoking (35%) and CP. The effect of CP on smoking cessation in this population is unknown. Moreover, no studies have examined the role of smokers' perceptions and outcome expectations (OEs) regarding the effect of smoking on pain in the context of smoking cessation among people with MIs. The aim of this study is to examine whether OEs are prospectively associated with smoking cessation and motivation to quit after controlling for CP. Hypotheses were 1) OEs regarding the effect of smoking on pain would be prospectively associated with smoking cessation over and above the effect of self-reported CP, and 2) among non-quiters, OEs would predict motivation to quit over and above the effect of CP. This study is a secondary analysis of a smoking cessation induction trial among smokers with MIs ($n=263$, $M=54$ yrs, 55% female). Smokers did not have to be motivated to quit to enroll. Baseline measures were: Self-reported CP (constant & frequent pain, not fleeting or minor) and the Pain and Smoking Inventory (PSI), which has 3 subscales assessing OEs: smoking as a strategy for coping with pain (PSI-Cope), pain as motivator of smoking (PSI-Motiv) and pain as a barrier to smoking cessation (PSI-Barrier). Outcomes were 7 and 30-day point prevalence abstinence (ppa) 4 and 6-months post-baseline. Motivation to quit was assessed at baseline and 6-months (are you planning to quit smoking within 30-days? Yes vs no). Data were analyzed on an intention to treat approach (missing=smoking) with logistic regression models adjusted for age, treatment group, past year quit attempts and CP. Baseline motivation was also controlled for in models with motivation as the outcome. At baseline, 86% self-reported CP. PSI scores on all subscales were significantly higher in those with, vs. those without CP ($p<.01$). Only the PSI-Cope scale was significantly associated with 7-day ppa ($OR=.76$, 95%CI=.58, 1.0) and 30-day ppa ($OR=.68$, 95%CI=.50, .93), such that greater use of smoking to cope with pain predicted lower odds of smoking cessation; self-reported CP was not significant associated with either outcome. Among smokers who never quit during the study ($n=137$), the PSI-Motiv ($OR=1.44$, 95%CI=1.03, 2.0) and PSI-Barrier ($OR=1.5$, 95%CI=1.03, 2.1) scales were significant predictors (not the PSI-Cope scale), such that those who perceived pain as a motivator to smoke and those who perceived it as a barrier to quitting were more likely to be planning to quit within 30 days. Smoking to cope with CP appears to be a more important predictor of smoking cessation vs. self-report of CP, which has implications for identifying smokers who may need more support with cessation.

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Paper Session 7: Revisiting the Role of Pain in Behavioral Medicine

11:30 AM-11:45 AM

INJURY STATUS AS A MODERATOR OF BIDIRECTIONALITY BETWEEN PAIN AND PTSD SYMPTOMS IN VETERANS

Sharon Y. Lee, M.A., M.S.¹, Lucy Finkelstein-Fox, M.S.¹, Crystal Park, Ph.D.²

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The Department of Veterans Affairs estimates that 17% percent of recent veterans have comorbid pain and PTSD, which is higher than rates found in nationally representative samples. According to the Mutual Maintenance Model of pain and PTSD, properties of one condition feed into the escalation of symptoms for the other condition (Sharp & Harvey, 2001). However, few studies have empirically tested this model by examining the bidirectional relationship between pain and PTSD symptoms over time, and none have examined deployment injury status as a moderator of these bidirectional effects. To address these gaps in the literature, the present longitudinal study examined the bidirectional relationship between self-reported pain interference and PTSD symptoms in a sample of male and female OEF/OIF/OND veterans, and tested deployment injury status as a moderator of these links. The following hypotheses were tested: The relationship between pain and PTSD symptoms is bidirectional for both injured and non-injured veterans (H1); reciprocal relationships between pain and PTSD symptoms are stronger for injured veterans than for non-injured veterans (H2); and PTSD symptoms, rather than pain, are a stronger determinant of the reciprocal relationship between pain and PTSD symptoms for both injured and non-injured veterans (H3). Participants completed phone interviews about pain interference and PTSD symptoms at three time points, each three months apart. We conducted two separate cross-lagged panel analyses using structural equation modeling for injured veterans ($n=381$) and non-injured veterans ($n=338$), with the end of active service date as a covariate. Results partially supported H1 and fully supported H2, demonstrating bidirectionality between pain and PTSD for the subset of veterans who sustained injuries during deployment, but not for veterans with pain symptoms unrelated to deployment injuries. For injured veterans, elevated PTSD symptomology over time was mediated by pain (Time 1 PTSD to Time 2 Pain: $\beta=-.15(.05)$, $p<.01$; Time 2 Pain to Time 3 PTSD: $\beta=.10(.04)$, $p<.05$), whereas elevated pain over time was not mediated by PTSD symptoms; therefore, H3 was not supported. These results suggest that pain management may be a crucial target for the comprehensive care of returning veterans with PTSD symptoms and deployment-related injuries.

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CITATION AWARD WINNER
Paper Session 8: Supporting
the Health of Mothers During
Pregnancy **10:45 AM-11:00 AM**

UNDERSTANDING FACTORS LINKED TO WEIGHT GAIN EARLY
IN PREGNANCY AMONG WOMEN WHO BEGIN PREGNANCY
WITH OVERWEIGHT OR OBESITY

Michele D. Levine, PhD¹, Maria Tina Benno, BS², Rachel P. Kolko, PhD³, Rachel H. Salk, PhD⁴, Marsha D. Marcus, PhD¹, Elizabeth M. Venditti, PhD⁵

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Women who begin pregnancy overweight or obesity (OV/OB) are at risk for gaining more weight during gestation than is recommended. Gaining excessive gestational weight is associated with negative obstetric outcomes and weight-related health complications. To address pregnancy-associated weight gain, it is important to examine the timing of gestational weight gain (GWG) and to identify modifiable factors associated with excessive gestational weight gain. Accordingly, we sought to examine prenatal characteristics among pregnant women with OV/OB.

Pregnant women ($N = 200$) with a body mass index ≥ 25.0 kg/m² ($M = 32.7 \pm 6.45$) and gestational age < 20 ($M = 15.6 \pm 2.4$) were enrolled in a longitudinal study of the psychosocial predictors of GWG. Women were 28.2 ± 5.5 years old and 55% ($n=109$) reported the current pregnancy to be unintentional. All women self-reported their weight prior to pregnancy and height and weight were measured at study enrollment. Early GWG was calculated as the difference between current weight and self-reported pre-pregnancy weight. Rate of early GWG was determined as the ratio of GWG to weeks of gestation. Women also reported demographic and pregnancy-related information, and completed a semi-structured psychiatric interview.

On average, women gained 8.2 ± 13.0 lbs in early pregnancy and 28% ($n=55$) had met or exceeded guidelines established for total GWG. Women with pre-pregnancy obesity gained more early GWG (6.3 ± 9.5 vs 9.7 ± 15.1 , $p = .056$) than did women with pre-pregnancy overweight ($p = .001$). Non-white women ($p = .001$) and those with low income ($p = .004$) also gained more early GWG. However, there were no differences in lifetime history of psychiatric disorders, intentionality of pregnancy, perceived stress or current depressive symptoms between women who had and had not gained early weight. Further examination of women at the highest quartiles of early gestational weight gain suggests that some women gain 23.9 ± 12.1 lbs early in pregnancy at a rate of $1.6 \pm .9$ lbs weekly.

Women starting pregnancy at high risk for excessive GWG gain a large amount of their total gestational weight in the first half of pregnancy. Women in the highest quartiles of weight gain exceed the rate of weight gain suggested by the Institute of Medicine and have already exceeded IOM guidelines for 40 weeks of gestation within the first 20 weeks of pregnancy. Women who begin pregnancy with obesity and nonwhite women with low incomes may be at greatest risk for early weight gain but do not differ in psychological and psychiatric characteristics related to weight gain. Early GWG may be a critical target for intervention.

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Paper Session 8: Supporting the Health of Mothers
During Pregnancy **11:00 AM-11:15 AM**

INTEGRATION OF TECHNOLOGY IN LIFESTYLE INTERVENTIONS
FOCUSED ON WEIGHT GAIN DURING PREGNANCY: A SYSTEMATIC
REVIEW

Alicia A. Dahl, MS, PhD (abd)¹, Marilyn Wende, BS, MSPH², Gabrielle Turner-McGrievy, PhD, MS, RD¹, Shan Qiao, PhD¹, Sara Wilcox, PhD¹, Jihong Liu, ScD¹, Rachel E. Davis, MPH, PhD¹

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INTRODUCTION: Obesity rates among women of childbearing age are a growing public health concern. Nearly half of pregnant women in the U.S. enter pregnancy overweight or obese. Similarly, half of pregnant women exceed the Institute of Medicine guidelines for healthy gestational weight gain (GWG). Technology-mediated health interventions serve as a readily-accessible resource for delivering pregnancy weight-related information. This systematic review aimed to assess the impact of technology-mediated interventions on the prevention of excessive GWG.

METHODS: This review used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Three main MeSH terms were identified as critical components of this systematic review: technology, pregnancy, and weight outcomes. The second main search parameter was inclusion of randomized controlled trials (RCTs) only. Literature was collected through PubMed and Web of Science databases, and then reviewed and summarized from July 2016 through September 2017 by two reviewers. Only studies in which GWG was a measured outcome (collected by self-report or clinically-measured anthropometric data) were included.

RESULTS: Thirteen RCTs were selected for inclusion. The pooled RCTs included a total of 4,928 pregnant women, with seven studies based in the U.S. Ten of the studies relied on health coaches or registered dietitians for counseling support in the intervention. Telephone calls were the most commonly reported technology component ($n=6$, 46.2%) followed by text messages ($n=5$, 38.4%) and websites ($n=2$, 15.4%). Four of the studies reported significant differences in favor of the technology-mediated intervention groups, where participants gained less GWG compared to participants in the control groups.

DISCUSSION: We are unable to conclude whether technology-mediated lifestyle interventions are more successful in preventing excessive GWG than standard OB care, due to the varying demographic characteristics and sample sizes of the studies included in this review. Additionally, the diverse sources of technology used across these studies prevent us from concluding which methods are more or less effective in the prevention of excessive GWG. To address gaps in the literature, studies that examine the effect of different technology-mediated methods in lifestyle interventions, specifically among a powered sample of pregnant women, are needed to guide future e-Health interventions and resources.

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Paper Session 8: Supporting the Health of Mothers During Pregnancy

11:15 AM-11:30 AM

MOBILIZING MHEALTH FOR MOMS: A REVIEW OF MOBILE APPS FOR TRACKING GESTATIONAL WEIGHT GAIN

Alicia A. Dahl, MS, PhD (abd)¹, Caroline G. Dunn, MS, RD², Alycia Boutte, MPH¹, Anthony Crimarco, MS¹, Gabrielle Turner-McGrievy, PhD, MS, RD¹

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INTRODUCTION: Almost one-half of all pregnant women in the U.S. exceed the Institute of Medicine's (IOM) weight gain guidelines. Mobile apps hold promise as a beneficial tool for facilitating healthy gestational weight gain (GWG). However, there is a need to examine apps on the market to determine if they provide users information consistent with IOM guidelines and behavioral strategies to help facilitate healthy GWG. The aim of this study was to review mobile apps on Apple and Android app stores that focused on GWG tracking and evaluate their features for meeting the IOM weight gain guidelines, as well as if they contained tools to encourage healthy nutrition and physical activity (PA) during pregnancy.

METHODS: App descriptions were reviewed for inclusion criteria. Trained research staff downloaded and conducted a review of apps that focused on tracking GWG. The apps were assessed by two reviewers, using a profile of an overweight pregnant woman at 12–13 weeks gestation. The reviewers entered predetermined weights daily for eight consecutive days. The weekly rate of weight gain was set above 0.6 lbs. per week, which exceeded IOM guidelines for healthy GWG for an overweight woman. Apps were independently scored based on presence of weight-related features and guidelines.

RESULTS: Initially 296 apps were screened for review. Among these apps, 196 were excluded from further review because they (1) did not have a pregnancy focus or option, (2) were not in English, or (3) were not able to be downloaded or were no longer available. Another 13 apps were excluded because of technical issues. The final review included 87 apps. Overall, 73 (84%) apps had a weight tracking feature, 19 (22%) apps provided accurate weight gain guidelines, eight (9%) apps included calorie (kcal) recommendations, and seven (8%) apps included exercise guidelines.

DISCUSSION: Overall, there is a paucity of apps for tracking GWG that use IOM guidelines and promote evidence-based healthy weight-related behaviors during pregnancy. This is a missed opportunity because currently available weight-tracking apps may not be effective in preventing excessive GWG without providing accurate, individualized GWG recommendations or behavioral modifications necessary for healthy weight gain. Furthermore, this review demonstrates the importance of health care practitioners' role in providing accurate information and behavioral support for achieving healthy weight in pregnancy.

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Paper Session 8: Supporting the Health of Mothers During Pregnancy

11:30 AM-11:45 AM

TREATMENT FIDELITY OF A STRESS MANAGEMENT PROGRAM FOR PREGNANT WOMEN: THE SMART MOMS PROJECT

Guido Urizar, PhD¹, Menchie Caliboso, M.A.², Cassandra Gearhart, M.A.¹

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Despite the adverse effects that elevated levels of prenatal stress and cortisol have on maternal and infant health outcomes, few studies have developed and evaluated behavioral interventions designed to reduce stress during this critical period of development. The current study examined the efficacy and treatment fidelity of the SMART Moms Project (a prenatal stress management intervention) on reducing stress levels (perceived stress, salivary cortisol), improving negative and positive mood states (PANAS), and increasing confidence to use relaxation and coping skills among 55 low-income pregnant women (71% Latina, 76% annual income < \$20K). Women attended weekly group-based sessions over an 8-week period in which a clinically trained researcher taught relaxation and coping skills. Treatment fidelity was assessed via videotaped class sessions that were then coded for enactment, delivery, and receipt of the intervention to determine which of these factors were associated with changes in treatment outcomes (stress, mood, confidence) over the 8-week period. Paired samples t tests demonstrated a significant reduction in stress and cortisol levels [$t(52) = 7.26, p < .001$], improvements in negative and positive mood states [$t(249) = 6.07, p < .001$], and feeling more confident in using relaxation and coping skills post-intervention. Regression analyses showed that the treatment fidelity factors of enactment (participant use of intervention skills; $\beta = .45, p < .05$) and delivery (instructor adherence to intervention content; $\beta = .41, p < .05$) were most associated with demonstrated improvements in treatment outcomes. These findings demonstrate the impact that prenatal stress management interventions can have in improving women's health outcomes and identify treatment fidelity factors to be considered when delivering these interventions in underserved communities.

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Panel Discussion 1

12:45 PM-1:45 PM

DISCUSSION OF NIH SCIENTIFIC PRIORITIES FOR ADVANCING RESEARCH ON ADHERENCE TO TREATMENT AND PREVENTION REGIMENS

Janet S. de Moor, PhD, MPH¹, Susan M. Czajkowski, Ph.D.²

¹National Cancer Institute, National Institutes of Health, Rockville, MD; ²National Cancer Institute, National Institutes of Health, Bethesda, MD, MD

Improving treatment adherence is the top priority of the National Institutes of Health (NIH) Adherence Research Network. The persistent challenge of sub-optimal adherence to prescribed medication and other treatment and prevention regimens (hereafter referred to as treatment adherence) highlights the need for transformative research in this area. Poor treatment adherence is common, regardless of the condition targeted, type of treatment, or population studied. Evidence from many chronic conditions has demonstrated a relationship between poor treatment adherence and an increased risk of disease occurrence, progression and mortality. However, despite several decades of research in this area, sub-optimal treatment adherence remains a considerable problem and there is a lack of consensus about how to improve adherence in different clinical contexts. A critical public health need is to build upon the current evidence base to fully understand the conditions that precipitate poor treatment adherence and develop and implement interventions to improve treatment adherence and health outcomes. This one hour panel discussion will highlight NIH scientific priorities for understanding and addressing suboptimal treatment adherence and provide a forum for group discussion between representatives from the NIH Adherence Network and the audience. More specifically, the panel will review the state of the science of treatment adherence and discuss major knowledge gaps and methodologic shortcomings of prior research that need to be addressed. The panel will then describe the scientific priorities of the NIH Adherence Network (and participating Institutes and Centers) for research to address the pervasive problem of suboptimal treatment adherence across conditions, populations and clinical contexts. Because treatment adherence is a complex phenomenon, influenced by the interaction of factors operating at the level of patient, family, provider, healthcare system, community, and the broader societal context, the importance of and need for rigorous multi-level research will be discussed. To support audience members who intend to apply for funding, information will be provided about specific funding opportunities at NIH for supporting adherence research and strategies for applying for grant funding from NIH. Examples of successfully funded projects will also be shared. The panel will be concluded with a group discussion between the presenters and the audience about the material presented.

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Panel Discussion 2 12:45 PM-1:45 PM**CREATING THE IMPACT YOU SEEK IN BEHAVIORAL MEDICINE'S RAPIDLY-EVOLVING PUBLISHING LANDSCAPE**David E. Conroy, Ph.D.¹, Kevin S. Masters, PhD², Suzanne M. Miller, PhD³, Rachel Warren, N/A⁴¹The Pennsylvania State University, University Park, PA; ²University of Colorado Denver, Denver, CO; ³Fox Chase Cancer Center, Philadelphia, PA; ⁴Oxford University Press, New York, NY

Behavioral medicine experts have more options than ever before for disseminating their ideas and empirical discoveries. The options can be dizzying with traditional peer-reviewed journal articles complemented by emergent opportunities for stimulating dialogue in open-access journals, blogs, social media, press releases and more. Authors can increase their productivity and the impact of their work if they understand how and when to leverage these tools. Yet it is difficult to keep track of developments brought about by advancing technology, an evolving publishing industry, and the open science movement. This session features brief presentations from leaders in the behavioral medicine publishing community: the editors for the Society's two peer-reviewed journals and a representative from the Society's new publishing partner, Oxford University Press. Each speaker will present brief (10 minutes) informal remarks followed by an open question-and-answer period for attendees to ask their questions about navigating this rapidly-evolving landscape. Topics will include perspectives on (1) keys for success in peer review, (2) the status and health of the journals, (3) visions for the future of publishing behavioral medicine scholarship, and (4) whatever other topics are on the audience's mind.

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Panel Discussion 3 12:45 PM-1:45 PM**EMPIRICAL APPROACHES FOR ADAPTING BEHAVIORAL INTERVENTIONS IN CANCER CONTROL AND PREVENTION FOR SEXUAL MINORITY POPULATIONS**Jennifer M. Jabson, PhD, MPH¹, Deborah Bowen, PhD², Charles Kamen, PhD, MPH³, Alicia Kaye. Matthews, Illinois⁴, John Pachankis, PhD⁵¹University of Tennessee, Knoxville, TN; ²University of Washington, Seattle, WA; ³University of Rochester Medical Center, Rochester, NY; ⁴University of Illinois at Chicago, Chicago, IL; ⁵Yale University, New Haven, CT

Background: Sexual minority (gay, lesbian, and bisexual) people experience disparities in cancer risk and cancer-related outcomes. Behavioral interventions that address these disparities across the cancer control and prevention continuum are one important aspect of a comprehensive approach for reducing and eliminating disparities. However, most behavioral interventions have been designed without consideration of sexual orientation or the unique barriers that may diminish intervention efficacy for sexual minority people. Behavioral scientists and practitioners have addressed this problem by adapting behavioral interventions for sexual minority people. Few empirical or conceptual resources inform what adaptations can be made and which cancer-related outcomes are sensitive to adaptations among sexual minority people. Using conceptual frameworks and empirically-based experiences, this panel will discuss the state of the science in behavioral intervention adaptation for sexual minority people across the cancer control and prevention continuum. It will identify persisting gaps and propose empirically based solutions.

Methods: Each of the panelists will discuss their experiences adapting behavioral interventions to reduce sexual minority people's cancer risk and improve health across the cancer control continuum. Behavioral interventions to be discussed include physical activity for LGB cancer survivors; mindfulness-based stress reduction for LGB people in Appalachia; cognitive behavioral therapy for gay and bisexual young men, and tobacco cessation for LGB persons.

Results: Behavioral interventions can be adapted to address the needs of sexual minority persons, and these adaptations can be based on established conceptual frameworks. Adapted interventions produce positive experiences for sexual minority people participating in research. Adaptation work best when they are based on empirically identified needs with the target population. Additional data is needed to identify these specific needs, develop a toolkit of specific adaptation approaches, and test additional behavioral intervention to improve cancer related outcomes for sexual minority people.

Conclusion: In-depth feasibility testing is essential for adapting behavioral interventions to the needs of sexual minority people across the cancer control and prevention continuum. Published frameworks and empirical evidence should guide future adaptations to behavioral interventions, with the aim of reducing cancer disparities.

CORRESPONDING AUTHOR: Jennifer M. Jabson, PhD, MPH, University of Tennessee, Knoxville, TN; jjabson@utk.edu

Panel Discussion 4 12:45 PM-1:45 PM**CREATING WALKABLE COMMUNITIES WITH WAYFINDING: THE NEW ORLEANS PERSPECTIVE**Janet Fulton, PhD¹, Adrian P. Bell, MSc CMILT², Kurt Weigle, MUPL³, Ginny Frederick, MS⁴¹CDC, Atlanta, GA; ²Activator Planning, Vancouver, BC, Canada; ³New Orleans Downtown Development District, New Orleans, LA; ⁴Centers for Disease Control and Prevention, Athens, GA

Regular physical activity reduces the risk of several chronic diseases. To improve access to opportunities for physical activity, such as walking, the U.S. Surgeon General has released a Call to Action to Promote Walking and Walkable Communities. Improving walkability in communities can help improve safety, community cohesion, and economic vitality. Many strategies exist to improve walkability. While some may be resource-intensive, such as designing communities, others offer evidence-based options to those with fewer resources.

One way to improve walkability is to provide street-level information about walking times and directions throughout a city, commonly known as wayfinding. Wayfinding has been successfully implemented in several cities across the U.S., Canada, and Europe. One example of wayfinding is the Walk to Fly Study which used point-of-decision prompt signage in the Atlanta Airport to encourage travelers to walk to their departure gate instead of riding the train. The prompts provided walking time and direction and as a result, walking increased 11–17%, with roughly 800 more travelers per day choosing to walk. This strategy can extend beyond airports to other settings such as cities.

The design of maps, signs, and other tools that go into a wayfinding project are guided by a strategy. The strategy uses surveys and community engagement alongside research on the physical legibility, traveler needs and navigational tactics used locally. The effectiveness of the solutions can be evaluated to determine their impact on outcomes such as walkability, health, transportation, safety, community identity and cohesion, and economic vitality.

The city of New Orleans has some wayfinding in the downtown and is considering updating, coordinating, and expanding wayfinding across several communities. The purpose of this session is to discuss wayfinding as a strategy to improve walkability, describe the process of developing an effective wayfinding system, and provide insights from New Orleans. Presenters will describe the process of developing and implementing an effective wayfinding system with domestic and international examples. The panel discussion will also include an overview and update of the current wayfinding system development project being completed in New Orleans. This will allow attendees the unique opportunity to hear from city officials how wayfinding became a priority for New Orleans and how wayfinding to improve walkability could be applied more broadly.

CORRESPONDING AUTHOR: Janet Fulton, PhD, CDC, Atlanta, GA; jkf2@cdc.gov

Panel Discussion 5 12:45 PM-1:45 PM**OVERCOMING BARRIERS TO NIH FUNDING FOR OPTIMIZATION OF BEHAVIORAL AND BIOBEHAVIORAL INTERVENTIONS**Thelma Mielenz, PhD¹, Ahnalee Brincks, PhD², Angela Pfammatter, PhD³, Sara StGeorge, PhD⁴, David N. Cavallo, PhD, MPH⁵¹Columbia University Mailman School of Public Health, New York, NY; ²Michigan State University, East Lansing, MI; ³Northwestern Feinberg School of Medicine, Chicago, IL; ⁴University of Miami Miller School of Medicine, Miami, FL; ⁵Case Western Reserve University, Cleveland, OH

The primary objective of this forum is to discuss strategies for overcoming perceived barriers to applying for NIH funding for proposals with the goal of optimization of behavioral and biobehavioral interventions (OBBI). By optimizing on aspects such as treatment effect, cost, patient burden, etc., behavioral and biobehavioral interventions can realize a greater public health benefit.

Proposals focusing on research study frameworks, designs and approaches to create, optimize and then evaluate interventions are considered novel and innovative by NIH. Although a growing number of NIH funding announcements specifically request the use of the multiphase optimization strategy (MOST) framework, including specific approaches, such as full and fractional factorial experiments, sequential, multiple assignment randomized trials (SMARTs), and microrandomized trials (MRTs), being an early adopter is challenging and these challenges may be a perceived barrier to receiving funding.

To frame this discussion, we will draw on examples from our own research to outline challenges presented by OBBI proposals to NIH. The following topics will be covered, including: i) supporting rationale for use of the MOST Framework and SMART designs; ii) sample size considerations (e.g. SMART designs); iii) new clinical trial definition policy and its impact on OBBI; iv) K award and OBBI and v) overall limitations of OBBI designs

CORRESPONDING AUTHOR: Thelma Mielenz, PhD, Columbia University Mailman School of Public Health, New York, NY; tjm2141@columbia.edu

Panel Discussion 6**12:45 PM-1:45 PM****BEHAVIORAL MEDICINE CAREER TRANSITIONS: MAKING THE MOVE FROM POSTDOCTORAL FELLOWSHIP TO EARLY CAREER**Karen Oliver, Ph.D.¹, Karlene Cunningham, PhD², Carly M. Goldstein, PhD³, Marisa Sklar, PhD⁴¹Alpert Medical School of Brown University/Providence VA Medical Center, Providence, RI; ²Brody School of Medicine, East Carolina University, Greenville, NC; ³The Miriam Hospital/The Alpert Medical School of Brown University, Providence, RI; ⁴University of California San Diego, La Jolla, CA

Making the move from postdoctoral fellowship to an early career position marks one of the most exciting time points in one's career. Progressing from trainee status to junior faculty can be both highly rewarding and anxiety-provoking. There are considerable challenges and opportunities that occur as people adjust to the new roles and responsibilities of their position, including meeting the new demands of the position, finding mentorship, working independently, earning a salary, balancing work and family, and/or becoming a supervisor instead of a supervisee. This panel will discuss opportunities and challenges in transitioning from postdoctoral fellowship to a variety of early career positions, including research, teaching, and clinical work. Discussion will include panelists' personal experiences with the postdoctoral fellowship to early career transition points as well as strategies for successfully coping with challenges and capitalizing on opportunities. They will share "lessons learned" and provide strategies for audience members to consider when faced with their own unique career transition challenges. This panel is designed to be interactive and there will be time for questions and discussion.

CORRESPONDING AUTHOR: Karen Oliver, Ph.D., Alpert Medical School of Brown University/Providence VA Medical Center, Providence, RI; Karen_Oliver@brown.edu

Panel Discussion 7**12:45 PM-1:45 PM****TRAINING OPPORTUNITIES IN BEHAVIORAL RESEARCH WITHIN THE NATIONAL CANCER INSTITUTE**Richard P. Moser, PhD¹, Maria A. Rincon, MPH², Emily B. Peterson, PhD²¹National Cancer Institute, Bethesda, MD; ²National Cancer Institute, Rockville, MD

The National Cancer Institute (NCI) is the largest institute within National Institutes of Health and the one that leads the nation's cancer research program. One of the critical goals of the NCI is to train the next generation of cancer researchers, and each year NCI trains approximately 3,500 fellows. Cancer-related training opportunities are especially critical for those engaged in behavioral research given the vital role of behavior in reducing cancer burden for the public along the entire cancer continuum, from prevention to end-of-life. This panel will first provide a brief overview of NCI and then focus on a training program offered within the Division of Cancer Control and Population Sciences (DCCPS). DCCPS offers a multi-disciplinary research training program including concentrations in behavioral, epidemiological, surveillance and health care-related topics. This training program accepts trainees from a wide range of educational backgrounds ranging from high school students up to and including those with doctoral-level degrees (e.g., PhD; MD). Next, the panel will provide an overview of current training opportunities and mechanisms offered in DCCPS, including the Cancer Research Training Award program, the Cancer Prevention Fellowship and Health Communication Internship Program. This discussion will include the degree requirements, application process, and fellowship focus. Following this overview, two current DCCPS fellows—one a post-Master's, and one a post-doctoral (PhD) fellow, will each discuss their respective educational and training backgrounds, share how they obtained their fellowships, describe their research interests and current projects, discuss professional training and leadership development opportunities available for fellows, and provide helpful advice for those interested in obtaining a DCCPS fellowship. Following the presentations, time will be allotted for attendees to ask questions of the presenters and to learn more about the myriad fellowship opportunities within DCCPS.

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Panel Discussion 8**12:45 PM-1:45 PM****DO TREATMENT EFFECTS LAST?**Lee M. Cohen, Ph.D.¹, Matthew R. Cribbet, Ph.D.², Michael G. Perri, Ph.D., A.B.P.P.³, C. Steven Richards, Ph.D.⁴¹University of Mississippi, University, MS; ²Texas Tech University, Lubbock, TX; ³University of Florida, Gainesville, FL; ⁴Dept of Psy Sciences, Texas Tech University, Lubbock, TX

Panel Discussion at SBM, 2018:

Do Treatment Effects Last?

Abstract: Treatment effects often do not last. This problem is of considerable importance to treatment programs, research efforts, theoretical developments, and strategies to improve behavioral medicine interventions and public health. This panel discussion will focus on three specific health topics, to discuss the issues of treatment maintenance and evidence-based ways to enhance the long-term maintenance of treatment effects. The first presenter will discuss these issues in the context of the long-term management of smoking-cessation efforts, including behavioral interventions and multi-disciplinary efforts. The second presenter will discuss these issues in the context of the long-term management of sleep disorders, again including behavioral interventions and multi-disciplinary efforts. Finally, the third presenter will discuss these issues in the context of the long-term management of obesity, yet again with a focus on behavioral interventions and multi-disciplinary efforts. The last 20 minutes of this 1-hour panel discussion will be reserved for questions and answers, and a general discussion, with the panel and members of the audience. The introductions, Q&A, and general discussion with the audience will be moderated by the panel chair. The long-term maintenance and management of treatment effects is one of the challenging issues in behavioral medicine and associated areas in public health. These panel presentations and discussions will focus on this issue—*Do Treatment Effects Last?*

CORRESPONDING AUTHOR: Lee M. Cohen, Ph.D., University of Mississippi, University, MS; leecohen@olemiss.edu

Panel Discussion 9**12:45 PM-1:45 PM****ENHANCING MEASURES SELECTION USING THE NATIONAL COLLABORATIVE ON CHILDHOOD OBESITY RESEARCH MEASURES REGISTRY AND USER GUIDES**Amanda I. Samuels, MS, MPH¹, Sharon Kirkpatrick, PhD², Leslie A. Lytle, PhD³, James F. Sallis, PhD⁴, David Berrigan, PhD⁵, Jill Reedy, PhD⁶¹FHI 360, Washington, DC; ²University of Waterloo, Waterloo, ON, Canada; ³University of North Carolina at Chapel Hill, Chapel Hill, NC; ⁴UC, San Diego, La Jolla, CA; ⁵National Cancer Institute, Bethesda, MD; ⁶NCI, Bethesda, MD

Selection of appropriate and robust measures for capturing individual-level diet and physical activity (PA) behaviors and the environmental forces that influence these behaviors is a critical element of studies within the field of behavioral medicine. The National Collaborative on Childhood Obesity Research (NCCOR) Measures Registry is a searchable data base of 1207 studies that shed light on the properties of measures of behavior and environmental factors relevant to childhood obesity research. Recently, NCCOR, with funding from The JPB Foundation, commissioned the development of four detailed User Guides introducing critical issues in measurement and designed to facilitate effective use of individual and environmental measures of diet and PA. The Guides include case studies illustrating use of the Registry to aid in the selection of appropriate high-quality measures for a variety of research and practice purposes.

In this panel, participants will hear brief summaries of the main features of the Measures Registry and User Guides. These summaries will be interspersed with hands-on exploration of the Registry and Guides (using user-supplied laptops) to consider cases. Case studies will cover a range of applications, including randomized experimental designs, implementation studies, collection of evidence to guide monitoring, and evaluation of programs. Cases will be selected with an eye to relevance to researchers and practitioners from multiple sectors. These activities will be complemented by discussions of critical issues in measures selection within the domains of diet and PA, which will emphasize practical considerations, such as tradeoffs between respondent burden and level of detail collected, as well as complementary uses of device-based versus self-reported measures of PA.

While the focus of NCCOR and its measurement tools is children, principles of measures selection apply across the life course, and environmental measures may be equally relevant to adults and children. In sum, this panel session will introduce participants to state of the art resources and guidance concerning measures selection, facilitated by leading obesity, diet, PA, and environment-oriented public health researchers.

CORRESPONDING AUTHOR: Amanda I. Samuels, MS, MPH, FHI 360, Washington, DC; asamuels@fhi360.org

Panel Discussion 10 12:45 PM-1:45 PM**ADVERSE COMMUNITY EXPERIENCES AND RESILIENCE - ADDRESSING THE ADDICTION EPIDEMIC**

Ruben Cantu, N/A, Sheila Savannah, MA

Prevention Institute, Oakland, CA

Substance abuse and addiction has been an issue in the U.S. for decades, with a devastating impact on individuals, families and entire communities. Lately, we have seen a heightened awareness of the severity of this impact as opioid addiction and related deaths have reached near epidemic levels and have touched a wider range of populations that had previously been less affected. Awareness however is most effective when it is accompanied with a deeper understanding of root causes and a commitment to comprehensive action. The factors that often lead to substance use, addiction and often untimely death have roots in what are becoming known as diseases of despair. To address the underlying conditions of this crisis, we must identify solutions that foster hope and opportunity for those who feel hopeless and disempowered due to lack of jobs, disinvestment in education and public infrastructure, strained social connectedness and negative social norms. While there has been much attention on individual trauma resulting from these conditions, there has been less focus on trauma at the community level. Responding to the kind of trauma that we see affecting communities as a whole requires not only trauma-informed care for affected individuals, but also community-level solutions to address the physical, social-cultural, and equitable opportunity environments.

This session will introduce the Adverse Community Experiences and Resilience (ACE|R) framework as a lens through which to examine the growing opioid epidemic from varying angles and by multiple sectors. The framework provides an understanding of community-level trauma, including symptoms that play out in communities which contribute to and reinforce opioid use, including a break-down of social networks, relationships, and positive social norms across the community – as well as a disinvestment in public spaces and the built environment – all of which would otherwise be protective factors. The framework has been used by groups as diverse as community-based organizations, health departments, and practitioners to understand trauma at a community level and identify and develop strategies to build resilience. We will also share promising multi-sector strategies from across the U.S., including newer policy and practice efforts in Ohio, for building resilience and healing.

The ACE|R framework was developed by Prevention Institute and Dr. Howard Pinderhughes, with funding from Kaiser Permanente Northern California Community Benefit, to understand and address Adverse Community Experiences.

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Panel Discussion 11 12:45 PM-1:45 PM**PHQ-9: IS IT A GOOD MATCH FOR INTEGRATED PRIMARY CARE?**Jennifer S. Funderburk, PhD¹, Rodger S. Kessler, N/A², Kurt Kroenke, MD³, John E. Ware, Jr., PhD⁴, William Douglas Tynan, Ph.D.⁵, Kathryn Kanzler, PsyD, ABPP⁶

¹VA Center for Integrated Healthcare, Syracuse, NY; ²Doctor of Behavioral Health, Arizona State University, Phoenix, AZ; ³Indiana University School of Medicine, Indianapolis, IN; ⁴UMass Medical School, Bristol, RI; ⁵American Psychological Association, Washington, DC; ⁶University of Texas Health Science Center San Antonio, San Antonio, TX

The PHQ-9 has a strong empirical foundation, is available, and has become very popular to use as a screener for depression in primary care. However, there are questions about its utility and ability to meet the needs among patient groups with multiple health problems and mental health needs. This is especially true within integrated behavioral health primary care settings, where the goal is improving functioning and quality of life for a broad range of presenting concerns. The purpose of this panel is to generate discussion regarding the strengths and challenges of using the PHQ-9. This discussion will help move forward current thoughts regarding whether or not it is a good match for integrated primary care settings and stimulate future research and discussion. Dr. Kroenke, one of the original developers of the PHQ-9, will present a brief presentation on the original purpose of the PHQ-9 and his thoughts for its utility. Dr. Kessler, an expert researcher on integrated care, will briefly discuss the fit (and lack thereof) of the PHQ-9 with integrated primary care settings. Dr. Ware, an expert in outcomes research and developer of the SF-36, will briefly discuss the integration of generic health outcomes monitoring and depression screening using the PHQ-9. This will be followed by a brief summary and discussion led by Dr. Tynan, a leader within the American Psychological Association on integrated health care. This will be a highly engaging presentation with half of the time reserved for panel discussion fueled by attendees questions and comments.

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Panel Discussion 12 12:45 PM-1:45 PM**PANEL DISCUSSION: INCORPORATING BASIC RESEARCH ON COGNITION AND AFFECT INTO CLINICAL GENOMICS**William Klein, PhD¹, Barbara Biesecker, PhD², Rebecca Anne Ferrer, PhD³, Jada G. Hamilton, Ph.D., M.P.H.⁴, Ellen Peters, PhD⁵, Jennifer M. Taber, PhD⁶

¹National Cancer Institute, Potomac, MD; ²National Human Genome Research Institute, NIH, Bethesda, MD; ³National Cancer Institute, Rockville, MD; ⁴Memorial Sloan Kettering Cancer Center, New York, NY; ⁵The Ohio State University, Columbus, OH; ⁶Kent State University, Kent, OH

The science of genetics and genomics continues to evolve rapidly and capture the attention of more junior scholars. A primary focus on single penetrance genes such as *BRCA1/2* for breast and ovarian cancer has been supplanted by a wealth of generation sequencing technologies such as whole genome sequencing, leading to population-scale efforts such as the *All of Us* initiative. These new technologies, while exciting, introduce a multitude of important social, psychological, ethical, behavioral, and communication issues. People may now be faced with a wealth of information about genetic predispositions for disease and other health outcomes (for themselves and their families), accompanied by choices about when, how, where, and under what conditions they might receive and act on the information. Given that decision making is influenced greatly by basic cognitive and affective processes, it is essential to understand the cognitive and affective factors that might play a role in how people engage with genomic information. Moreover, because genetic testing may involve recommendations for lifestyle changes, it is also important to understand how genetic information can best be communicated to individuals and their family members to promote engagement in behaviors that can potentially modify their disease risk and improve health outcomes. In this panel, basic behavioral scientists who have stretched their work on cognition and affect into the domains of genomic risk, testing, communication, and behavior change will briefly review their work with a focus on barriers to this area of research, methods for overcoming those barriers, and lessons learned about the most feasible, fundable, and clinically relevant research questions one might address in this area. Speakers on this panel have expertise in: health communication; decision making; risk perception; cognition, affect and health; genetic counseling; decisions about receiving genetic risk information; and behavior change. The discussion is sponsored by the NCI Cognitive, Affective, and Social Processes in Health Research (CASPHR) working group, the Theories and Techniques of Behavior Change Interventions SIG, and the Health Decision Making SIG. The CASPHR group recently published an article linking self-regulation theory to genetic testing (Cameron et al., 2017, *Social and Personality Psychology Compass*) and is more generally interested in forging stronger connections between basic behavioral science and behavioral medicine particularly with regard to cancer prevention and control.

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Panel Discussion 13

12:45 PM-1:45 PM

REPORT FROM THE AST ADHERENCE TASK FORCE: REAL WORLD OPTIONS FOR PROMOTING ADHERENCE

Larissa Myaskovsky, PhD¹, Kristin Kuntz, PhD², Michelle Jesse, PhD³, Cynthia L. Russell, PhD⁴, Zeeshan Butt, PhD⁵, Mary Amanda Dew, PhD⁶, John Devin Peipert, PhD⁷, Nimisha Sulejmani, PharmD, BCPS⁸, Abbie Leino, PharmD, BCPS², Christina Spivey, PhD⁹

¹University of New Mexico, School of Medicine, Albuquerque, NM; ²The Ohio State University Wexner Medical Center- Columbus, Ohio, Columbus, OH; ³Henry Ford Health System, Detroit, MI; ⁴University of Missouri-Kansas City, Kansas City, MO; ⁵Feinberg School of Medicine, Northwestern University, Chicago, IL; ⁶University of Pittsburgh, School of Medicine, Pittsburgh, PA; ⁷David Geffen School of Medicine, University of California, Los Angeles, Los Angeles, CA; ⁸Henry Ford Hospital, Detroit, MI; ⁹University of Tennessee Health Science Center College of Pharmacy, Memphis, TN

Adherence to medication and other forms of medical regimen adherence is an important area of study in behavioral medicine. Solid organ transplant recipients must adhere to a complex post-transplant medical regimen to ensure the health of their donated organ and their own health and well-being post-transplant. Thus, promoting adherence in organ transplant recipients is an important area of study for behavioral medicine clinicians and researchers.

The proposed panel will present the two-year work of a task force organized by the American Society of Transplantation to develop a white paper that focused on clinically practical, evidenced-based interventions that transplant centers could implement to increase adherence to medication and behavioral recommendations in adult solid organ transplant recipients. The task force consisted of behavioral researchers, clinicians, and transplant pharmacists. The group focused on what centers could do in their daily routines to implement best practices to increase adherence in adult transplant recipients. We developed a list of strategies using available resources, clinically feasible methods of screening and tracking adherence, and activities that ultimately empower patients to improve their own self-management. Because adherence is not solely a patient-driven factor, we examined broader multi-level areas for intervention including provider and transplant program practices. However, we did not include policy-level systemic solutions to improve adherence such as better coverage of medication costs through long-term Medicare immunosuppression coverage, as this form of intervention would not be within the direct control of the transplant center. We focused on issues of feasibility for clinical application, scalability and dissemination because there are already a number of excellent published literature reviews on adherence in transplant patients. We sought to investigate how the findings from others' work translate to clinical applications, and whether they would easily translate into clinical practice. The group aimed to take lessons from the literature and then come to consensus about what these lessons indicated for best practices in adherence assessment and intervention.

We will present the white paper findings, and then use it as a springboard for a discussion of issues related to transplant adherence, including defining, measuring, and intervening on adherence. Ultimately, the task force aims to foster greater recognition, discussion, and solutions regarding transplant center needs, resources, cultural changes, and other best practices required for implementing practical interventions targeted at improving adherence.

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Panel Discussion 14

12:45 PM-1:45 PM

INNOVATIONS IN INTERPROFESSIONAL MENTAL HEALTH INTEGRATION EDUCATION: DEVELOPMENTS FROM A MULTI-SITE VA PRIMARY CARE PROJECT

Joshua L. Ruberg, Ph.D.¹, Jennifer Manuel, PhD², Noel Quinn, Ph.D.³, Elizabeth Painter, PsyD⁴, Kerri Schutz, PsyD⁵, C. Scott Smith, MD⁶, Anna Strewler, MS, AGNP-BC⁷, Renee H. Lawrence, PhD⁸

¹VA San Diego Healthcare System, San Diego, CA; ²San Francisco Veterans Affairs/University of California, San Francisco, san francisco, CA; ³VA Connecticut Healthcare System, West Haven, CT; ⁴Louis Stokes Cleveland VA Medical Center, Cleveland, OH; ⁵Department of Veterans Affairs, Los Angeles, CA; ⁶University of Washington, Boise, ID; ⁷San Francisco VA Health Care System, San Bruno, CA; ⁸Louis Stokes Cleveland Veterans Affairs Medical Center, Cleveland, OH

An ever-increasing number of healthcare facilities nationwide are integrating mental health (MH) care into primary care settings. In 2010, the Department of Veteran's Affairs (VA) formed the team-based Patient Aligned Care Team (PACT) primary care program and required the co-location of at least one MH provider for every PACT clinic that serves at least 5000 Veterans. However, MH co-location has not yet ensured the functional integration of MH care into PACT, and many PACT clinics do not effectively deliver team-based MH care. This is due in part because, prior to working in this capacity, the majority of PACT providers do not receive training alongside integrated MH providers, which can promote competency in team-based delivery of MH care. Toward this end, Five Centers of Excellence in Primary Care Education (CoEPCE) were established in 2011 by VA with the aim of fostering the development of interprofessional curricula related to patient-centered primary care. In 2015, CoEPCE was expanded with a goal of developing an interprofessional curriculum for the delivery of MH services in PACT.

This panel will share innovations in interprofessional MH curricular design developed at our CoEPCE sites. The goal of this panel is to help trainees and clinicians in academic primary care settings (VA and non-VA alike) learn several approaches to interprofessional team-based learning. Attendees will better understand how this training model can improve team-based provider competence with the delivery of MH services while also improving patient outcomes. Panelists from three sites will discuss innovations in three domains of team-based learning: didactic instruction, reflective practice, and workplace learning. The first panelist will discuss advances in our Motivational Interviewing (MI) didactics. Our MI training curriculum has evolved over the years and has been adapted to include clinically-relevant learning, coaching, and feedback opportunities that are feasible within a demanding interprofessional primary care training environment. The second panelist will discuss the role and importance of reflective practice in interprofessional curricula and primary care, highlighting innovations that utilize narrative writing and video tape review of patient encounters. The third panelist will discuss PACT-Interdisciplinary Case Unit (PACT-ICU), a systematic case conference model for high-risk, high-needs primary care patients that has been formally developed by the Boise VA and disseminated to five other CoE sites. Variations will be presented based on the San Francisco and West Los Angeles versions that are tailored to their specific populations.

Finally, a previous CoEPCE trainee and now current faculty member and two national consultants to CoEPCE (a physician and psychologist) will lead a discussion on how to implement interprofessional MH education in academic primary care settings.

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Thursday April 12, 2018 12:45 PM – 1:45 PM

(PANEL DISCUSSION 15) PANEL DISCUSSION 15: OFFICE HOURS WITH NIH PROGRAM DIRECTORS

Chair: William N. Elwood, Ph.D. – OppNet/Health-Scientist Administrator, National Institutes of Health

Discussant: William N. Elwood, Ph.D. – OppNet/Health-Scientist Administrator, National Institutes of Health

Chair: Erica E. Moore, BS – Communications Director, OFFICE OF BEHAVIORAL AND SOCIAL SCIENCES RESEARCH, NATIONAL INSTITUTES OF HEALTH

Co-Presenter: Karen Lee, MD MPH – NIH/NICHD

Co-Presenter: Annette Kaufman, PhD, MPH – Health Scientist/Program Director, National Cancer Institute

Co-Presenter: Lanay Mudd, PhD – Program Director, National Institutes of Health

Co-Presenter: Adelaida M. Rosario, PhD – Health Specialist, Div of Scientific Programs, Community Health and Population Science Branch, NIH/National Institute on Minority Health and Health Disparities

Co-Presenter: Catherine Stoney, PhD – Program Director, NHLBI/NIH

Co-Presenter: Wendy Weber, ND, PhD, MPH – Branch Chief, Division of Extramural Research, NCCIH/NIH

Co-Presenter: Dana L. Wolff-Hughes, PhD – Health Scientist Administrator, Office of Behavioral and Social Sciences Research, National Institutes of Health

Co-Presenter: Dawn A. Morales, Ph.D., Experimental Psychology – Health Scientist, National Institute of Dental and Craniofacial Research, National Institutes of Health

Co-Presenter: Susan M. Czajkowski, Ph.D. – Chief, Health Behaviors Research Branch, National Cancer Institute, NIH

NIH can seem daunting and mysterious to new investigators or experienced researchers looking to expand their horizons beyond the topics they traditionally have addressed. OBSSR hosts Office Hours to simplify the process of connecting researchers and NIH program directors.

Rather than a grantspersonship workshop, this session provides roundtable mentoring with at least one IC-based program director per table. If a laptop and projector are available, a timed PowerPoint presentation will provide application tips and funding opportunities throughout the session.

Participants who'd like tailored advice for their projects-in-development should bring at least five paper copies of a one- to two-page synopsis of the research aims, hypotheses, and methods. Participants interested in fellowship opportunities should bring a similar number of vitae/biosketches. NIH staff will provide participants with detailed feedback and advice. OBSSR representatives will provide overall scientific feedback and refer participants to ICs and program directors not represented at this meeting.

Symposium 18 2:00 PM-3:15 PM

SHAPING THE FUTURE OF PHYSICAL ACTIVITY PROMOTION: HIGHLIGHTS FROM THE 2018 PA GUIDELINES SCIENTIFIC ADVISORY COMMITTEE REVIEW

Abby C. King, PhD¹, David X. Marquez, PhD², Melissa A. Napolitano, PhD³, Matthew P. Buman, PhD⁴, Melicia Whitt-Glover, PhD⁵

¹Stanford Prevention Research Center, Palo Alto, CA; ²University of Illinois at Chicago, Chicago, IL; ³The George Washington University, Washington, DC, DC; ⁴Arizona State University, Phoenix, AZ; ⁵Gramercy Research Group, Winston-Salem, NC

As evidence for the positive health impacts of regular physical activity and reduced sedentary time continues to grow, there is increasing urgency to substantively address the physical inactivity epidemic in the U.S. and worldwide. Using a social ecological framework, this session will highlight the evidence reviewed by the 2018 Physical Activity Guidelines Scientific Advisory Committee of those intervention approaches with demonstrated efficacy as well as those which show promise in stemming the tide of inactivity at different levels of impact. Dr. Abby King (chair) will begin the session with an overview of the Scientific Advisory Committee's work across different levels of impact, including examples of effective interventions at the environmental and policy levels. Dr. David Marquez will present on efficacious approaches at the individual and community levels of impact. Dr. Melissa Napolitano will describe the current state of the evidence in the information technology arena, and Dr. Matthew Buman will overview the latest advances in reducing sedentary time. Finally, Dr. Melicia Whitt-Glover will highlight the most critical challenges, needs, and future directions required to significantly advance the physical activity promotion field.

Symposium 18A

EFFECTIVE PHYSICAL ACTIVITY PROMOTION AT INDIVIDUAL AND COMMUNITY LEVELS

Dr. David X. Marquez, PhD

For decades, behavioral scientists have been conducting physical activity (PA) research at various levels of impact, including individual-level interventions, which involve delivery of in-person PA advice, support, and/or other behavior change strategies, and community level interventions occurring in those locales where people gather for educational, housing, consumer-related, health-related, or social purposes. The purpose of this presentation is to highlight effective interventions at individual and community levels based on a recent evidence review. Individual-level interventions have occurred across the life course, and have often been theory-based. Promising cCommunity-level interventions have occurred in schools and childcare settings, as well as in community-wide, faith-based, nurse-delivered, worksite, and primary care settings. However, within both individual and community levels there is large variability related to study rigor and population targets. At the individual level, evidence was supportive of diverse interventions in youth and in different adult age groups, including, for the latter ages, those that were peer-led and theory-driven. For example, peer-led self-management interventions were found to be effective in older adults and individuals with chronic disease at producing small but meaningful increases in PA when compared with minimal/no-treatment controls. At the community level, evidence was particularly supportive of interventions in community-wide and school settings. For example, in schools, interventions that revise the structure of physical education classes have been effective for increasing PA in primary school-aged youth. Among recommendations for future research at the individual level are lengthening intervention and evaluation periods; examining the role of self-regulation techniques and related evidence-based strategies in more diverse populations across the age range; and examining which interventions are effective across life-course transitions. Among recommendations for research at the community level are conducting rigorous cluster-randomized designs; broadening enrollment targets to include more diverse sociodemographic groups; evaluating targeted uses of technologies in broadening potential reach and efficacy of such programs; and applying relevant behavioral theories to further guide intervention development and evaluation.

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Symposium 18B

PHYSICAL ACTIVITY PROMOTION USING INFORMATION AND COMMUNICATION TECHNOLOGIES

Dr. Melissa A. Napolitano, PhD

Technological capabilities have enabled physical activity (PA) promotion interventions to be delivered via a variety of communication channels and strategies. The accessibility and reach of these technologies among US adults and youth have made them attractive platforms upon which to deliver PA interventions. A review of interventions using information and communication technologies (ICT) was conducted. To aid in review and future study, ICT interventions were subcategorized by delivery channel (e.g., telephone assisted, web-based or Internet delivered, social media, mobile phone, computer tailored print) or device (e.g., activity monitor, interactive video game). Within the seven subcategories, there is sufficient evidence to promote the use of activity monitors among adults and those with diabetes. Examining other devices, like interactive video games, yielded insufficient evidence for increasing physical activity for adults and children, primarily due to study quality and duration of outcomes measured. Despite this, there is some promise related to the use of interactive video games for settings such as schools or in settings to promote short term bouts of activity among older adults. There also is evidence to support the use of different channels for delivery of physical activity information and support, including telephone-assisted, web-based or Internet delivered, and mobile phone applications, with varied efficacy for each by population. Areas of future promise and further study include the use of social media, which had weaker evidence but was generally positive in terms of intervention effects. Finally, the use of computer tailored print, which involves technology support to deliver personalized messages and support also showed positive, but small effects for promoting physical activity among adults. Future studies in the information and communication technology arena should broaden reach to increase diversity and sample generalizability as well as employing new methods for evaluating information technology innovations (e.g., adaptive interventions). During this symposium, exemplars in each of the seven subcategories will be discussed along with additional recommendations for future areas that will continue to advance the physical activity field.

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Symposium 18C

REDUCING SEDENTARY TIME IN YOUTH, ADULTS, AND OFFICE WORKERS

Dr. Matthew P. Buman, PhD

Behaviors done while sitting or reclining that require little energy expenditure (i.e., sedentary behaviors) are ubiquitous, habitual, and socially-reinforced in modern societies. Environmental, social, and individual-level determinants of sedentary behavior appear distinct from those associated with moderate-vigorous physical activity. Intervention strategies have recently emerged that have sought to target sedentary behavior in different contexts (e.g., schools, television viewing, and workplaces) and population subgroups (e.g., youth, adults, and office workers). The purpose of this presentation is to summarize the evidence on the efficacy of interventions for reducing sedentary time from a recent evidence review. There was substantial evidence to support small but consistent intervention effects for strategies targeting youth. These interventions varied in age group (i.e., 3–15 years), context (e.g., school, clinic, community), and intervention length (most > 6 months), but focused primarily on targeting reductions in television and screen-time behaviors. There was insufficient evidence for sedentary behavior focused interventions for reducing sedentary time in general adult populations due to few and poor quality studies. There was, however, small but consistent effects for “lifestyle” based interventions (i.e., intervention strategies simultaneously targeting sedentary and physical activity behaviors) for reducing overall sedentary time. The strongest evidence, with moderate to large effect sizes for workplace sedentary behavior, were observed among office workers. The most efficacious interventions were multicomponent in nature (i.e., inclusive of individual, social, and environmental elements) and included provision of a sit-stand workstation, walking workstation, or other activity-permissive environmental supports. Finally, there was little to no evidence overall for compensatory (e.g., reducing sedentary time during work will increase sedentary time outside of work) or cross-over (e.g., sedentary behavior interventions increasing moderate-vigorous physical activity) effects. Among recommendations for future sedentary behavior intervention research are more rigorous research designs, broadening interventions to more population subgroups (e.g., older adults, workers in diverse work environments), and the dissemination and implementation of evidence-based strategies to assess real-world effectiveness.

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Symposium 19

2:00 PM-3:15 PM

ACCEPTANCE-BASED APPROACHES TO BEHAVIOR CHANGE; APPLICATIONS TO WEIGHT CONTROL AND PHYSICAL ACTIVITY INTERVENTIONS

Margaret Schneider, Ph.D.¹, Jocelyn Rimmert, B.A.², Leah Schumacher, MS², Courtney J. Stevens, PhD³, Meghan Butryn, Ph.D.²

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Acceptance-based behavioral treatments (ABT) targets behaviors for change (e.g., physical activity, diet, smoking) by providing individuals with the skills to accept the internal experiences (e.g., thoughts, feelings, physiological sensations) that may impede the behavior change and encouraging them to link behavioral goals with personal values. Relevant skills include accepting the experience of negative thoughts and sensations without letting these internal experiences dictate behavioral choices, being willing to engage in desired or valued behaviors that may come with uncomfortable internal experiences, and learning to “defuse” from the negative internal experiences (i.e., creating some separation between these experiences and behaviors). Interventions utilizing ABT to increase physical activity either as an end in itself or as a means to bring about weight loss have shown some promise. This symposium will present data from three independent intervention studies using ABT. A pilot study delivered in a middle-school setting found that 12 weekly ABT sessions increased physical activity and improved physical fitness among low-active adolescents compared to a control group. In a longer trial of ABT, 26 group sessions designed to target weight loss by increasing physical activity and modifying diet were found to increase food craving acceptance and physical activity acceptance among 283 adults with overweight/obesity. Although the ABT group did not show greater weight loss over the course of the intervention, greater increases in acceptance related to eating and physical activity were related to weight loss across all study groups. A third study of insufficiently active women delivered 2 ABT workshops and found a positive impact on physical activity acceptance. Moreover, higher physical activity acceptance at the end of the 30-day intervention predicted exercise maintenance at the 9-month follow-up. The overall findings from these three studies will be summarized by a discussant, who will address the lessons learned from these studies and the suggested directions for future research.

Symposium 19A

PILOT TEST OF AN ACCEPTANCE-BASED BEHAVIORAL INTERVENTION TO PROMOTE PHYSICAL ACTIVITY AMONG ADOLESCENTS

Jocelyn Rimmert, B.A.

Introduction: School-based interventions to date have had little success increasing adolescent physical activity (PA). New strategies are needed. Acceptance-based behavioral treatments (ABT) for PA encourage individuals to accept internal experiences (emotions, urges, physiological sensations) and not attempt to alter or suppress them, with the goal of uncoupling internal experiences from PA and instead linking PA to what is most important and personal: values. Studies of ABT for PA have demonstrated preliminary efficacy among adults; however, ABT for PA is untested among adolescents. This study reports the findings of a school-based pilot of an ABT intervention for PA.

Methods: Middle schoolers (n=20) who engaged in fewer than 60 min/day of moderate-to-vigorous physical activity (MVPA) completed assessments for cardiorespiratory fitness (cycle ergometer), body fat (skinfold), body mass (BMI percentile; height and weight), and waist circumference before and after a 12-week intervention. Students randomized to an ABT PA intervention (N = 10) received 12 weekly behavioral counseling sessions consisting of acceptance (i.e. willingness, defusion, values) and behavioral (i.e. goal setting, habit formation) skills. All participants wore a Fitbit Flex to assess PA throughout the intervention period (weeks 1–12). Descriptive data and effect sizes examined changes in fitness, body fat, BMI percentile and waist circumference. Multivariate linear mixed effect analysis evaluated the impact of the intervention on Fitbit steps and MVPA.

Results: The FitBit data showed a steady increase in steps (150 steps/day each week; $p < .01$) and MVPA (1 minute/day each week; $p < .001$) in the intervention group but not in the control group. At the end of 12 weeks, the intervention group had increased average daily steps by 1200 and average min/day of MPVA by 12 minutes. Compared to the no-intervention control group, the intervention group demonstrated improvements in measures of physical fitness, with medium to large effect sizes (cardiorespiratory fitness VO_2 ml/kg/min, $d=+4.38$; body fat, $d=-2.14$; BMI percentile, $d=-0.77$; and waist circumference, $d=-0.57$ cm).

Conclusion: A school-based intervention combining acceptance-based and behavioral skills showed preliminary evidence of efficacy among low-active middle-school students. After the 12-week intervention, the intervention group was more active and demonstrated changes in a positive direction on a range of fitness indices.

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Symposium 19B

TARGET ENGAGEMENT AND MECHANISMS OF ACTION IN ACCEPTANCE-BASED BEHAVIORAL TREATMENT FOR ADULT OBESITY

Leah Schumacher, MS

Acceptance-based behavioral treatment for obesity has shown promise for improving weight loss outcomes. However, not all trials of this approach have demonstrated superior outcomes to traditional behavioral therapy (BT). Additional research on target engagement and hypothesized mechanisms of action in acceptance-based treatment is needed to inform further treatment development. This study examined change in several measures of psychological acceptance in a randomized trial evaluating the efficacy of an acceptance-based treatment for obesity. In this trial, a main effect of condition on weight loss was *not* observed. Participants were 283 adults with overweight/obesity ($M_{BMI} = 35.0 \text{ kg/m}^2$; $M_{age} = 53.2$; 78.8% women; 68.1% White) recruited from the community. Participants were randomized to receive 26 group sessions of traditional BT, BT with skills for managing the obesogenic environment (BT+E), or BT with environmental and acceptance-based skills (BT+EA) over 12 months. Participants were weighed and completed measures of general acceptance (Acceptance and Action Questionnaire-II), food-specific acceptance (Food Craving Acceptance and Action Questionnaire; FAAQ), and physical activity-specific acceptance (Physical Activity Acceptance Questionnaire; PAAQ) at 0, 6, and 12 months. Results revealed a main effect of time on all measures of acceptance ($ps < .008$), with greater acceptance observed at 6 and 12 months across conditions. Additionally, there was a significant time by condition interaction on FAAQ ($p = .03$) and PAAQ scores ($p = .04$), with participants in BT+EA exhibiting greater FAAQ and PAAQ scores at 6 and 12 months ($ps < .03$). Controlling for baseline levels of acceptance and BMI, greater increases in FAAQ and PAAQ scores from 0 to 6 months predicted greater weight loss from 6 to 12 months ($ps < .001$). Greater increases in FAAQ and PAAQ scores from 0 to 6 months and 0 to 12 months also were associated with greater concurrent weight losses ($ps < .001$). These findings suggest that acceptance-based treatment targets food- and physical activity-specific acceptance to a greater extent than treatment without these skills, though this may not translate into superior weight loss. However, greater increases in eating- and physical activity-specific acceptance (regardless of condition) are related to greater weight loss. Additional research is needed to determine what accounts for increases in acceptance in treatments that do not integrate these skills. Future studies also should examine differences in acceptance-based protocols that may affect their efficacy (e.g., emphasis on particular skills).

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Symposium 19C

EXPERIENTIAL ACCEPTANCE AS A MECHANISM OF EXERCISE MAINTENANCE AND THE POSSIBLE ROLE OF WEIGHT STATUS ON INTERVENTION IMPACT: SUPPORTING EVIDENCE FROM THE GET ACTIVE! TRIAL

Courtney J. Stevens, PhD

Nearly half of American women are insufficiently active despite an enormous evidence base advocating the health benefits of regular exercise. Low rates of exercise adherence may be explained, in part, by the hedonic principle—"pursue pleasure, avoid pain." Exercise is associated with numerous aversive experiential factors, and obesity may contribute to exacerbation of those aversive factors. Acceptance-based behavioral interventions (ABBIs) promote participation in values-aligned behaviors (e.g., exercise) by increasing willingness to experience affiliated psychological and physical discomforts. The present investigation aimed to (1) test the impact of an exercise promotion ABBI on exercise behavior adoption and maintenance, (2) assess mechanisms of exercise behavior change (experiential acceptance), and (3) explore the role of weight status (obese, non-obese) across conditions.

$N = 119$ insufficiently active women aged 21–65 (BMI: 17–47 kg/m^2), were randomly assigned to 1 of the 3 interventions: (1) acceptance-based health coaching (ABBI), (2) education-based health coaching (EDUC), or (3) no-health coaching control (CTRL). The study was divided into 2 phases: Phase 1 "Adoption" (visit 1–visit 2), and Phase 2 "Maintenance" (3-, 6-, and 9-months follow up). During Phase 1, all participants completed a 30-day exercise program, and ABBI and EDUC participants received workshops at visits 1 and 2. All participants were contacted at 3-, 6-, and 9-months post-intervention to complete follow-up assessments.

The overall trend across Phases 1 and 2 was for ABBI participants to score highest on measures of exercise behavior. As expected, ABBI participants scored the highest on experiential acceptance at the end of Phase 1 controlling for acceptance scores at baseline, $F(1,106) = 7.17, p = .009$. Exploratory analyses revealed visit 2 experiential acceptance scores were highest among obese participants assigned to ABBI, $F(1,106) = 3.33, p = .071$. Finally, visit 2 experiential acceptance scores predicted exercise behavior at 3- ($b = .404, p < .001$), 6- ($b = .401, p < .001$), and 9-months follow up ($b = .306, p = .015$), suggesting experiential acceptance may be an important mechanism of exercise maintenance. This investigation builds on burgeoning work demonstrating the efficacy of exercise promotion ABBIs. Future work should more thoroughly assess the underlying reasons why obese participants may be particularly receptive to an acceptance-based approach.

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Symposium 20

2:00 PM-3:15 PM

FAMILY COMMUNICATION OF CANCER GENETIC INFORMATION

Ashley Elrick, MA¹, Yelena P. Wu, PhD², Smita Banerjee, PhD³, Kimberly Kaphingst, ScD¹

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For cancer genetic information, patients are expected to communicate their genetic test results or familial risk for cancer to biological family members so that family members can decide on genetic testing for themselves or make other medical and behavioral decisions. Genetics specialists (e.g., genetic counselors) can strongly encourage cancer patients to share information with their family, but healthcare providers cannot directly contact family members, which necessitates family communication (e.g., direct communication between family members). Therefore, better understanding of family communication processes and development and testing of family communication interventions is critical to improving outcomes among those at risk of cancer due to their family history. This symposium will present three papers, including a systematic review and two current intervention research that inform the mechanisms through which communication of genetic information may influence health behavior change within families. Presenter #1 will present findings from a systematic review of family communication interventions for genetic information and highlight research gaps identified by the review. The review emphasizes a lack of randomized control trials for intervention research and summarizes potential frameworks and considerations for future interventions. Presenter #2 will present findings from a novel educational intervention to communicate risk for melanoma and preventive recommendations for children who have a familial risk of melanoma. Parents and children who received the educational intervention reported that the intervention was acceptable. Further, children's reported adherence to recommended preventive behaviors increased significantly over time. Presenter #3 will then present baseline family communication findings from a study examining skin cancer genetic testing interest and uptake in a primary care population. Family communication about skin cancer risk was relatively high, and particularly high among those individuals with higher perceived risk and worry about skin cancer. The Discussant will synthesize implications from the presentations and identify next steps in research on family communication interventions. This symposium will therefore describe current and future approaches to interventions to increase family communication of cancer genetic information and improve behavioral outcomes among biological family members of those tested for cancer risk.

Symposium 20A

STATE OF THE EVIDENCE: FAMILY COMMUNICATION INTERVENTIONS FOR GENETIC INFORMATION

Ashley Elrick, MA

Successful family communication of genetic test results is critical for family members of those tested to make fully informed medical decisions. Prior research and reviews describe barriers and facilitators of family communication of genetic information. However, no recent reviews are available for family communication interventions to highlight effective strategies nor recommendations for future intervention development. This project reviews literature on interventions for family communication of genetic information and related studies that could directly inform future interventions. We conducted a comprehensive electronic literature search of articles published in six databases between January 2010 and January 2017. Articles were included if they described an intervention (e.g., randomized control trial, development, framework) or presented results that directly inform future interventions. Of the 9,259 unique papers screened for inclusion, 75 papers were independently reviewed by two authors with discrepancies resolved by a third author. Of the 34 included papers, six publications were identified that explained five family communication interventions. Four were identified as randomized control trials with a variety of delivery methods (e.g., telephone, one-on-one, group). There were limited quantitative data to show the interventions impacted family communication more than usual care. One intervention showed a statistically significant effect on family communication and another had a significant effect through indirect measures (e.g., medical record reviews). Furthermore, two had over 400 participants while the others had much smaller samples. The remaining 28 articles were development, frameworks, or results directly impacting interventions. Intervention development articles had very small pilot sample sizes with most under 20 participants. The majority of articles did not include a theoretical foundation and primarily focused on breast and ovarian cancer or general cancer risks. Overall, few family communication interventions have been published since 2010. More research is needed to test interventions in randomized controlled trials with adequate power and pilots with larger samples. Additionally, quantitative data and evaluations are needed in future studies to support an effect of the intervention on family communication. Implications of these findings for future interventions on the family communication of genetic information will be discussed.

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Symposium 20B

A RISK COMMUNICATION AND PREVENTION INTERVENTION FOR CHILDREN AT RISK FOR MELANOMA AND THEIR FAMILIES

Dr. Yelena P. Wu, PhD

Children who have a parent with a history of melanoma are at increased risk for the disease. Melanoma preventive behaviors include use of sunscreen, protective clothing, and reducing ultraviolet radiation (UVR) exposure during peak hours (10 am–4 pm). Unfortunately, children are often sub-optimally adherent to these preventive behaviors. Our team designed a novel educational intervention for this population (Melanoma Education and Risk Information Team; MERIT). The intervention was provided to 18 families (33 children total) by 2 master's-level research assistants. It consisted of still slides and video lasting 30 minutes containing developmentally-appropriate information on children's elevated risk for melanoma based on their family history and demonstrated how preventive behaviors could mitigate this risk. Questionnaires assessed the acceptability of the educational materials, knowledge about key risk and prevention concepts, perceived risk for melanoma, and reported engagement in melanoma preventive behaviors and were completed immediately pre- and post-intervention, as well as 1 month post-intervention. On average, participants "agreed" to "strongly agreed" that the materials were useful, comprehensible and appealing. All participants demonstrated significant increases in knowledge about melanoma risk and prevention across time (all p 's $2(2)=15.4$, $p<.0001$). Per parent- and child-report, children's sunscreen use increased significantly ($F(1,21)=14.9$, $p<.05$; $F(1,30)=5.9$, $p<.05$), as well as shade-seeking ($F(1,21)=24.1$, $p<.05$; $F(1,32)=5.3$, $p<.05$). Only parents reported that children increased avoidance of peak UVR exposure ($F(1,21)=16.8$, $p<.05$). This pilot study of a novel educational intervention for children with an elevated familial risk for melanoma demonstrated that the intervention was acceptable to participants and was associated with positive effects across participants' knowledge, perceived risk, and engagement in preventive behaviors. If the present findings are confirmed in larger samples, attention could be given to identifying the best formats to deliver educational interventions for both parents and children and which components are particularly impactful in creating change in preventive behaviors.

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Symposium 20C

“LET’S TALK ABOUT SKIN CANCER”: EXAMINING ASSOCIATION BETWEEN FAMILY COMMUNICATION ABOUT SKIN CANCER, PERCEIVED RISK, AND SUN PROTECTION BEHAVIORS

Dr. Smita Banerjee, PhD

Communicating about skin cancer (e.g., family history, detection and prevention behaviors, and increased risk) is important within families at high risk for skin cancer. However, we do not know if the amount and content of skin cancer risk communication occurs in families with low or average perceived skin cancer risk. As part of a randomized controlled trial examining behavioral outcomes associated with *MCIR* skin cancer genetic testing in primary care, we describe the baseline patterns of family communication about melanoma risk, specifically associations between patterns of family communication behaviors and perceived risk for skin cancer. Participants (N=600; 79% women, 48% Hispanic, mean age=53.8) were randomized 1:5 to usual care or an online *MCIR* test offer. At baseline, half had talked about skin cancer risk with their doctors (54%), followed by friends/coworkers (49%), spouse/partner (43%), other family members (39%), sister (36%), mother (36%), daughter (33%), son (32%), father (24%), and brother (22%). The content of these conversations focused on skin cancer risk (68% about personal skin cancer risk, 60% about family skin cancer history, and 59% about family’s skin cancer risk), sun protection behaviors (89% about using sun protection and 59% about time of day to avoid sun exposure), and going to the doctor for skin cancer examinations (57%). Bivariate analysis revealed that participants with heightened perceived skin cancer risk were more likely to have discussions about family skin cancer history ($r=.21, p<.01$), personal skin cancer risk ($r=.19, p<.01$), family skin cancer risk ($r=.16, p<.01$), and going to the doctor for skin cancer examinations ($r=.14, p<.01$), but less likely to have discussions about sun protection ($r=-.13, p<.01$). Further, participants who reported communicating about skin cancer topics were significantly more likely to engage in sun protection (i.e., using sunscreen, wearing hats, sunglasses, and long-sleeved shirts, and seeking shade, $p<.05$). High perceived skin cancer risk appears to be associated with increased discussions around skin cancer risk. Additionally, people who engage in these discussions also engage in increased sun protection behaviors. Implications will be discussed for sun protection campaigns and interventions that encourage discussions about skin cancer risk, sun protection, and skin cancer screening within the family in order to encourage adoption of sun-safe behaviors.

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Symposium 21

2:00 PM-3:15 PM

RESEARCH FOUNDATIONS TO DISSEMINATION OF INTERVENTIONS IN CHRONIC DISEASE

Alexander Rothman, PhD¹, Annette L. Stanton, Ph.D.², Corinne Leach, PhD MS MPH³, Barbara L. Andersen, PhD⁴, Robert T. Croyle, Ph.D.⁵

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More than 117 million people, or approximately 50% of all adults in the United States, have a chronic health condition. A number of meta-analyses document the efficacy of behavioral medicine interventions to address behavioral and psychosocial contributors to and sequelae of chronic disease. Experienced in intervention development and dissemination, the presenters and discussant in this symposium will address how such interventions can be honed to make them more efficient and effective, as well as to carry greater reach. The first presenter will consider the merits of adopting an experimental medicine approach to effective intervention development, which emphasizes experimental tests of targets (i.e., mechanisms of change) and programmatic research on altering those targets for effective behavior change. He will illustrate major points with his experimental trials to change health behaviors that cause chronic disease, including eating behaviors and smoking. The second presenter will address how theories and research foundations in behavioral medicine can inform the development of effective interventions. She will illustrate central points with new findings from theory-guided research with 460 women recently diagnosed with breast cancer, which make the case for targeting specific coping processes in order to prevent depression in the first year after diagnosis. The third presenter will describe the development and testing of an ehealth self-management intervention as a cooperative initiative of two large organizations. The fourth presenter will discuss the necessity to disseminate evidence-supported interventions. She will convey lessons learned from efforts to disseminate a large-scale psychological intervention to reduce stress and improve quality of life, health behaviors, and adherence for cancer patients. From the National Institutes of Health, the discussant will address implications of the presentations for extending the reach of evidence-based interventions in chronic disease as well as directions for research and application.

Symposium 21A

OPTIMIZING THE LINK BETWEEN THEORETICAL PRINCIPLES AND INTERVENTION STRATEGIES: TOWARD UNDERSTANDING WHAT WORKS WHEN AND WHY

Alexander Rothman, PhD

Abstract: How can we optimize the design and delivery of intervention strategies to promote behaviors that underlie the prevention and/or management of health problems? (Social) psychological principles have the potential to specify the factors that guide people’s behavior and delineate the conditions under which they operate. Thus, they provide a framework for delineating the mechanisms of change (i.e., targets) which need to be modified in order for intervention strategies to be effective and, in addition, the conditions under which these intervention strategies will and will not be effective. However, numerous commentators have noted that the benefits that should come from the guidance provided by theory have been surprisingly elusive. Looking across several programs of research designed to test and develop intervention strategies to promote healthy behavior (e.g., smoking cessation), I will examine how adopting an experimental-medicine approach to the study of health behavior change can generate the evidence-base needed to optimizing the connections between theoretical principles and the effective use of intervention strategies. In addition, I will discuss how an experimental-medicine approach has the potential to cultivate a “healthier conversation” between theory and intervention and, in particular, how it might help address the too frequent disconnect between what interventionists need to know and the guidance theorists have to offer.

Symposium 21B

RESEARCH ON CANCER-RELATED COPING PROCESSES AS A FOUNDATION FOR INTERVENTIONS

Dr. Annette L. Stanton, Ph.D.

Background: Informed via basic and applied research, an important step in the development of maximally effective interventions is to identify theoretically-grounded and malleable processes through which interventions can achieve their effects. The speaker will provide illustrations of such research, primarily focusing on new findings from a large-scale longitudinal study of recently-diagnosed breast cancer patients. In that study, cancer-related approach- and avoidance-oriented coping processes were investigated as predictors of depressive symptoms, depressive symptom trajectory classes (unremittingly high, recovery, consistently low), and major depressive episodes (MDEs) over 12 months in women with breast cancer.

Method: Women ($N = 460$) within four months of breast cancer diagnosis completed validated assessments of cancer-related coping strategies, depressive symptoms, and MDEs at seven points across one year.

Results: Beyond sociodemographic and medical variables, coping through avoidance of the cancer experience an average of two months after diagnosis was associated with likelihood of being in the high trajectory class and occurrence of a MDE during the year. Less decline in avoidant coping over time also predicted poor outcomes. In contrast, high initial engagement in approach-oriented coping was associated with lower depressive symptoms across assessments and likelihood of being in the recovery or low trajectory class, as were increases in the approach-oriented processes of coping through emotional expression and acceptance.

Conclusions: Sustained avoidance-oriented coping and sustained or increasing coping through acceptance and emotional expression over 12 months predicted recovery from initially high depressive symptoms in women recently diagnosed with breast cancer. Interventions targeted toward reducing cancer-related avoidance and fostering acceptance and emotional expression, among other approach-oriented coping strategies, could aid in preventing and lessening the burden of depression in this group and perhaps others undergoing life-threatening diseases. Centering interventions on these and other evidence-based targets promises to render interventions for depression in adults with chronic disease more efficient and effective.

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Symposium 21C

BRINGING SELF-MANAGEMENT TO CANCER SURVIVORS THROUGH A MHEALTH PLATFORM: SPRINGBOARD BEYOND CANCER

Dr. Corinne Leach, PhD MS MPH

Background: In 2016, the American Cancer Society and the National Cancer Institute launched an online behavioral tool for cancer survivors. Springboard Beyond Cancer (SBC) is a free, customizable online tool leveraging behavioral science to help people self-manage physical and emotional symptoms, improve communication skills and lead healthier lives during and after a cancer diagnosis. SBC users can create printable, personalized Action Decks to identify cancer-related needs, set goals, create plans to achieve goals, monitor progress, and identify personally effective strategies.

Methods: Cancer survivors undergoing or post-treatment were recruited from clinical settings and community based organizations ($N=40$) to complete in-person usability tests of SBC. Participants explored the SBC site and then performed structured tasks to assess usability and understanding of the site. User comments and reactions were recorded and qualitative, thematic analyses were conducted. In addition, website metrics from Google Analytics were used to identify areas for website improvement, outreach and promotion opportunities. Key performance indicators tied to expected website outcomes were used to guide the analysis.

Results: Survivors, particularly those currently in treatment, found the information on the site to be clear, concise, and meeting their needs. However, survivors reported needing more instruction on how to best utilize Action Decks to prioritize their most pressing concerns. Once the action decks were explained, most felt they were a useful tool. From October 2016 to August 2017, SBC had 13,527 visits and 9,741 unique visitors. Metrics indicated that SBC was generally meeting engagement goals, but the action deck feature was being underutilized (14% of visitors used this feature). The top visited website content included the action deck page, symptoms overview, stress and mood management, and self-management basics pages. Engagement metrics such as average session duration (3:07), pages per session (3.16), returning users (29%), and mobile traffic (34% of visits are from mobile devices) exceeded initial goals.

Conclusions: Providing self-management content via an mHEALTH tool is feasible. Evaluation and web metrics data are guiding enhancements of SBC. SBC 2.0 will enhance user friendliness especially with action plans, and encourage engagement with interactive elements of the site.

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Symposium 21D

DISSEMINATION AND IMPLEMENTATION OF CANCER CONTROL ESTS: PRESENT AND FUTURE

Dr. Barbara L. Andersen, PhD

Background: Hundreds of randomized controlled trials have tested psychological treatments and found them efficacious in reducing stress and improving quality of life and health, with selected demonstrations of enhanced immunity and reduced risk for recurrence or cancer death. Unfortunately, ESTs (Evidence-Supported Treatments) have not been disseminated from research settings where they were developed, with underutilization of ESTs across settings and a resultant gap in care. Even when clinicians receive dissemination education, usage may be modest. Models for addressing this problem will be reviewed, including continuing education, web based instruction, and education and support.

Method: The latter strategy was studied by offering 3-day institutes to mental health providers in cancer (N=123) to learn the Biobehavioral Intervention (BBI), an EST designed to help cancer patients cope with stress.

Results: Research showed that training was effective. Clinicians were then offered 6 months of implementation support (e.g. conference calls, web resources). They were assessed post-institute and 2, 4, and 6 months later on attitudes towards evidence-based practices and the BBI, self-efficacy to implement the BBI, and intentions to use the BBI. BBI usage logs were completed at 2, 4, and 6 months. Providers used BBI with 57–66% of their patients, with other data showing sustained implementation at 12 months. The research also used the Theory of Planned Behavior (TPB) to understand individual level variables in the prediction of EST implementation. Consistent with the TPB, prior attitudes toward BBI predicted intent to implement, and prior intent predicted BBI implementation. In addition to these data, lessons learned will be discussed.

Conclusion: These data illustrate how the success of a dissemination strategy that begins with multimodality education can leave providers engaged and motivated to use an EST to delivery psychological cancer care.

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Symposium 22

2:00 PM-3:15 PM

DISSECTING THE “DIGITAL DIVIDE” - REACHING VULNERABLE POPULATIONS IN PAID MEDIA CAMPAIGNS

Sarah Field, BA, MA, Jamie Gray, BS Marketing, BS Psychology

ICF, Fairfax, VA

Background: The Smokefree.gov initiative (SFGI) is a large mobile health cessation program. Ensuring that the program reaches vulnerable populations is a challenge. Digital media may be especially effective in reaching these populations, as both general and vulnerable populations access digital channels with relatively equal frequency. In 2015, SFGI executed a \$1.2M digital paid media campaign to increase reach of and engagement with SFGI resources, prioritizing pregnant, teen, LGBT, and Spanish-speaking smokers.

Purpose: This study assesses the relative effectiveness of digital strategies in reaching vulnerable populations with smoking cessation resources.

Method: The performance of digital platforms was tracked and monitored using multiple tools: dashboards provided by paid media vendors, Google Analytics (website and mobile applications), and custom reports prepared by Smokefree's text messaging provider. Primary outcomes were engagement and signups/opt-ins to SFGI resources.

Results: This campaign resulted in 21 million impressions* with Spanish-speaking Hispanic smokers, 44 million impressions with teens, 29 million impressions with LGBT smokers, and seven million impressions with pregnant smokers. Compared across all campaign methods, email marketing performed particularly well for Hispanic smokers, Google and Bing paid search performed well for Hispanic and pregnant smokers, and programmatic online videos did well for LGBT smokers – more than half a million LGBT smokers watched our videos in full. The overall campaign's average cost-per-session (CPS) was low at \$1, but the more niche an audience was, the more expensive it was to drive web traffic to it. For example, CPS for pregnant smokers was \$10.43 and CPS for teen smokers was \$2.74. The cost-effectiveness of the campaign steadily increased over time, likely due to adjusting digital bids throughout the campaign's duration to optimize budgets and performance.

Conclusion: The results support the use of digital strategies to reach and engage vulnerable populations with cessation content. Smoking has increasingly become a health disparity issue, and the ability to target niche audiences will gain in importance for future campaigns. The advantages of digital, including the ability to optimize in real time and the efficient matching of content to subpopulation, support the use of these approaches.

*An impression is counted each time an add is shown on a search result page or other site

Symposium 22A

DISSECTING THE “DIGITAL DIVIDE” - REACHING VULNERABLE POPULATIONS IN PAID MEDIA CAMPAIGNS

Jamie Gray, BS Marketing, BS Psychology

Background: The Smokefree.gov initiative (SFGI) is a large mobile health cessation program. Ensuring that the program reaches vulnerable populations is a challenge. Digital media may be especially effective in reaching these populations, as both general and vulnerable populations access digital channels with relatively equal frequency. In 2015, SFGI executed a \$1.2M digital paid media campaign to increase reach of and engagement with SFGI resources, prioritizing pregnant, teen, LGBT, and Spanish-speaking smokers.

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Symposium 23

2:00 PM-3:15 PM

OPTIMIZATION EXPERIMENTS IN THE FIELD: THE MOST FRAMEWORK THROUGH 3 CLINICAL TRIALS

Bonnie Spring, PhD¹, Siobhan M. Phillips, PhD, MPH², Sara A. Hoffman, M.S.¹, Rachel A. Millstein, PhD, MHS³, Linda M. Collins, PhD⁴

¹Northwestern University, Chicago, IL; ²Northwestern University Feinberg School of Medicine, Chicago, IL; ³Massachusetts General Hospital, Boston, MA; ⁴Penn State, University Park, PA

Behavioral interventions often involve a “black box” approach, where a treatment package is provided to patients. Disentangling which components provide the greatest effect on outcomes of interest from the “black box” can be difficult. Interventions are also increasingly strapped for resources, and a gap exists between efficacious clinical trial findings and the ability to disseminate these findings with precision. The Multiphase Optimization Strategy (MOST) is an engineering-inspired framework for the optimization of behavioral and bio-behavioral interventions, and seeks to solve this issue by managing intervention resources effectively, using only those that provide the most benefit. MOST involves three phases: preparation, optimization, and evaluation. This symposium highlights the applicability of the MOST framework to complex questions in behavioral medicine, and outlines these phases through the lens of three different patient populations to underscore the utility of this framework for optimizing intervention treatment packages. The first presenter will overview the MOST optimization phase and discuss initial feasibility and recruitment for a new factorial experiment targeting physical activity in breast cancer survivors. The second presenter will discuss the end of the MOST optimization phase by describing 3-month outcomes and main effects of 5 behavioral components within a weight loss intervention, and will provide a brief synopsis of next steps to transition these findings to the evaluation phase of MOST. The final presenter will provide a linear overview of MOST by first discussing results from preparation phase experiments that informed a factorial trial for cardiac patients, and how the results of the optimization phase informed design and recruitment for a trial in the evaluation phase. The discussant will integrate each study into the MOST framework, discuss the utility of MOST to tailor factorial experiments to many patient populations, overview how randomized controlled trials (RCTs) are a key part of the MOST framework, and highlight future directions of this framework for behavioral interventions.

Symposium 23A

IMPLEMENTATION OF A NATIONWIDE REMOTELY-DELIVERED PHYSICAL ACTIVITY INTERVENTION AMONG BREAST CANCER SURVIVORS

Siobhan M. Phillips, PhD, MPH

An estimated 3 million breast cancer survivors live in the U.S. with this number expected to increase to 4 million over the next decade. Increased physical activity is associated with reductions in negative treatment-related side effects (e.g fatigue, depression), cancer recurrence and mortality and improved quality of life and survival. However, up to 70% of breast cancer survivors do not meet public health recommendations for physical activity. Although many factors contribute to survivors' low physical activity, an absence of accessible, effective physical activity programs is a major barrier. Most existing physical activity interventions are resource-intensive, on-site programs tested in controlled efficacy trials with limited potential to be translated into real-world practice. The primary objective of the Fit2Thrive study was to determine the effect of five remotely-delivered, technology supported intervention components on physical activity using Multiphase Optimization Strategy Trial (MOST) methodology. The five components to be tested include: (a) telephone support calls; (b) deluxe app; (c) Fitbit buddy; (d) online gym and (e) tailored text messages. All components have two levels: “on” versus “off”. This presentation will: (a) provide an overview of the theoretical framework; (b) highlight findings from initial pilot work that informed the design of the intervention; (c) explain trial implementation; and (d) describe key lessons learned from implementing a technology-supported intervention remotely, nationwide (i.e. without an in-person contact). Findings from the Fit2Thrive study will lead to an improved understanding of how to effectively change survivors' physical activity and could result in more scalable, effective physical activity interventions for breast cancer survivors to ultimately, improve health and disease outcomes.

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Symposium 23B

A MOST FACTORIAL EXPERIMENT TO OPTIMIZE A WEIGHT LOSS INTERVENTION: 3-MONTH OUTCOMES OF THE OPT-IN TRIAL

Ms. Sara A. Hoffman, M.S.

The optimization phase of the Multiphase Optimization Strategy (MOST) framework involves the selection of components, and testing the effect of these components within a structured experiment. Opt-IN is a 6-month remote behavioral weight loss intervention that uses the MOST framework to examine which intervention components or component levels contribute to the greatest weight loss. Using a full factorial experimental design, the five components/component levels examined were: 12 vs. 24 telephone coaching calls, progress reports to a primary care provider (PCP), text messages, meal replacement (MR) recommendations, and training a “Buddy” to provide social support. Progress reports were sent to PCPs at follow-up assessments, and those receiving texts had the option to receive 1 text/day on 7 days, or 2 texts/day on 3 days with an additional weekend text. MR recommendations were given on coaching calls, and a 1-week MR supply was provided. Buddies who received training were asked to attend 4 online webinars. All participants received a CORE weight loss program, comprised of a study-specific smartphone app, daily calorie/fat intake goals, and a weekly physical activity goal that increased from 100–300 minutes. The dependent variable was change in weight from baseline to 3-months. Opt-IN participants (n=562; M age=38.7, SD=11.8) were primarily non-Hispanic/Latino (87%), White (74.2%) and female (81.7%), and had a BMI between 25–40 kg/m² (M BMI=32.3, SD=3.6). Retention at the 3-month assessment was 90.8%. A mixed model ANOVA testing for main effects of each intervention component at 3 months indicates that participants who attended the 3-month assessment (n=509) lost an average of 8.37 pounds (SD=7.4), or 4.26% (SD=3.62) of their original weight. There was a main effect of Buddy training on weight change (lbs.) at 3 months: participants who were assigned to Buddy training lost 1.3 more pounds than those not assigned to Buddy training (p=.046). No other main effects on 3-month weight change were found for the remaining components. Training a buddy on how to support a proband's weight loss efforts appears to enhance the proband's weight loss success. Going forward, this study will examine both main effects and interactions among the 5 behavioral components on 6-month weight loss to determine an optimally effective and cost efficient weight loss intervention.

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Symposium 23C

A MULTIPHASE APPROACH TO OPTIMIZING A PSYCHOLOGICAL-BEHAVIORAL INTERVENTION IN CARDIAC PATIENTS

Dr. Rachel A. Millstein, PhD, MHS

Background: The Positive Emotions after Acute Coronary Events (PEACE) project aimed to use the multiphase optimization strategy (MOST) to iteratively optimize a positive psychology (PP) and motivational interviewing (MI) intervention. The overall goal of this intervention is to promote physical activity in post-acute coronary syndrome (ACS) patients.

Methods: The MOST preparation phase encompassed two development studies: PEACE I (n=34) involved a mixed (qualitative/quantitative) methods approach to gather input from post-ACS patients and customize the intervention for this population. PEACE II used a proof-of-concept trial of an 8-week phone-based PP intervention (n=23) versus treatment as usual (n=22), to assess feasibility and gather feedback about the PP intervention. The optimization phase, PEACE III (n=128), used a randomized, complete factorial design with eight study conditions in a 2x2x2 allocation to select the optimal intervention components, including both PP and MI. PEACE IV is an ongoing randomized controlled pilot trial (target n=40) to evaluate the efficacy of the optimized PP-MI intervention, versus an MI-informed control group, on physical activity.

Results: In PEACE I, higher optimism and positive affect following an ACS were associated with greater subsequent adherence to health behaviors, and participants indicated a preference for a brief (e.g., 8 weeks) phone-based intervention. In PEACE II, the PP intervention was found to be feasible, and PP participants had moderate pre-post improvements in positive affect, depression, and anxiety ($d_s = .47-.71$), but not dispositional optimism. In PEACE III, we modified the core intervention's content (PP only vs. PP-MI), intensity (daily vs. weekly exercises), and duration (with/without booster sessions) to generate the eight conditions. Booster sessions were associated with greater objectively measured physical activity ($\beta=8.58$, 95% CI: -0.49–17.65, $d=.43$; $p=.064$). MI was associated with overall self-reported adherence to health behaviors (e.g., diet, physical activity, medication adherence) ($\beta=0.95$, 95% CI: 0.02–1.87, $d=.39$; $p=.044$), and weekly exercise completion performed slightly better than daily on self-reported adherence. These findings, along with feasibility data, informed PEACE IV, a 12-week intervention.

Conclusions: Using MOST, we iteratively adapted an intervention to promote physical activity following an ACS, which is now being tested in a pilot randomized trial. MOST provided a logical and feasible process for efficient intervention development.

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Symposium 24

2:00 PM-3:15 PM

APPLICATIONS OF INTEGRATED SOCIAL COGNITIVE THEORIES IN PREDICTING AND CHANGING HEALTH BEHAVIOR

Kyra Hamilton, PhD¹, Derwin Chan, PhD², Dr. Ryan E. Rhodes, PhD³, Chun-Qing Zhang, Ph.D., M.Ed., B.Sc.⁴, Martin S. Hagger, PhD⁵

¹Griffith University, Mt Gravatt, Brisbane, Queensland, Australia; ²The University of Hong Kong, Pokfulam, N/A, Hong Kong; ³University of Victoria, Victoria, BC, Canada; ⁴Hong Kong Baptist University, Hong Kong, N/A, China (People's Republic); ⁵Curtin University, Perth, Western Australia, Australia

Modifying health behavior through intervention necessitates identifying target behavioral determinants and the accompanying mechanisms by which they guide the behavior. Motivational models such as theory of planned behavior have provided an extensive evidence base of salient antecedents and processes. However, there has been recognition that such theories have inherent limitations and models of greater complexity have been identified to encompass multiple predictors and processes. Models drawing from dual-phase and dual-process approaches such as health action process approach and reflective-impulsive model, in particular, have been foremost in informing this line of theory and research. Researchers have focused on extending these models to provide further insight into the complexities of health behavior change. The collection of papers in this symposium present new, innovative ways that integrated theoretical approaches and show how they have been adopted and applied to predict and explain health behavior. The symposium will showcase studies and research syntheses that highlight the multiple processes likely to impact health behavior derived from theory integration and provide suggestions on how these data can inform development of effective behavioral interventions.

Symposium 24A

PREDICTING HEAVY EPISODIC DRINKING IN YOUNG AUSTRALIAN UNIVERSITY STUDENTS: A DUAL PROCESS APPROACH

Dr. Kyra Hamilton, PhD

Objective: Australian national surveys indicate that young people aged 18–25 years are most likely to engage in risky single occasion drinking; this group is more likely to consume 11 or more standard drinks on a single occasion than people in any other age group. Dual process models that include both an explicit, conscious phase of motivation, as depicted by reasoned action models such as the theory of planned behavior, and an implicit, non-conscious route characterised by automatic, habitual responses are increasingly gaining support in their utility to explain variance in problem drinking behaviors. We applied a dual process model to identify predictors of heavy episodic drinking behavior in young university students.

Methods: Participants were undergraduates aged 18–25 years ($N = 200$, $M_{age} = 19.96$, $SD = 2.10$; 138 female). The study adopted a prospective correlational design with a four-week follow-up. At Time 1 (T1), participants completed measures of social-cognitive variables from the theory of planned behavior (attitude, subjective norm, perceived behavioral control, intention), self-reported habit, and past heavy episodic drinking behavior. Demographic information was also collected. At Time 2 (T2; $n = 152$), participants completed follow-up measures of habit and heavy episodic drinking behavior.

Results: Path analytic model testing proposed hypothesized relations of the dual process model exhibited a good fit to the data, accounting for 46.7% and 25.3% of the variance in intention and heavy episodic drinking behavior, respectively. Results showed significant direct effects of attitude, subjective norm, perceived behavioral control, and T1 habit, but not past behavior, on intention; and significant direct effects of T1 habit and past behavior on behavior, but no effects for intention and perceived behavioral control. There were also significant indirect effects of T1 habit on behavior mediated by T2 habit; and significant indirect effects of past behaviour on behavior mediated by T2 habit. No indirect effects were observed via the theory of planned behavior variables, supporting a non-intentional pathway to behavior.

Conclusions: Results indicate that students' heavy episodic drinking behavior tends to be governed more by non-conscious, automatic processes than by conscious, intentional processes. Future research should aim to address breaking problematic drinking habits to combat risky single occasion drinking in young university students.

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Symposium 24B

STUDENTS' MOTIVATION AND BELIEFS IN SPORT INJURY PREVENTION: A QUALITATIVE INVESTIGATION OF THE TRANS-CONTEXTUAL MODEL

Dr. Derwin Chan, PhD

Objective: The present study is the first qualitative investigation of the trans-contextual model in the context of sport injury prevention among secondary school students. We aimed to gain an in-depth understanding of the content, meanings, and patterns of motivational and social cognitive factors of sport injury prevention in the in-school and out-of-school contexts.

Methods: We conducted 17 semi-structured focus-group interviews in secondary school students (total $N = 128$; $M_{age} = 13.76$, $SD = 1.15$, range = 12–16; 54% male). Qualitative data was analysed using thematic content analysis based on typological approach. To test the primary tenet of the trans-contextual model (i.e., autonomous motivation in-school is transferred into autonomous motivation out-of-school), chi-square test of independence examined the distribution of quote counts between motivational themes identified in the in-school and out-of-school contexts.

Results: The theoretical components of the trans-contextual model, such as motivation (autonomous and controlled) in-school and out-of-school contexts, and attitude (affective and instrumental), subjective norm (descriptive and injunctive), and perceived behavioral control (positive or negative), emerged as higher-order themes in the analysis. Chi-square test showed that autonomous motivation was more frequently reported than controlled motivation in the out-of-school context (Odd Ratio = 4.81, $c = 1.29$, p

Conclusions: Current findings identified themes that were consistent with the trans-contextual model, and students' autonomous motivation of sport injury prevention were more salient than controlled motivation in the out-of-school context than in the in-school context.

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Symposium 24C

BRIDGING THE INTENTION-BEHAVIOR GAP IN PHYSICAL ACTIVITY: A REVIEW OF EVIDENCE FROM THE MULTI-PROCESS ACTION CONTROL FRAMEWORK

Dr. Ryan E. Rhodes, PhD

Objective: Theories in the social cognitive tradition have shown utility in changing physical activity, yet one of the most highlighted areas of concern is the established gap between intention and behavior, as these theories generally have limited explanation for intention-behavior discordance. Multi-process action control (M-PAC) was created as an organizing schematic to describe key reflective (affective judgments, opportunity), regulatory (plans, monitoring, enlisting support), and reflexive (habit, identity) constructs proposed to bridge the intention-behavior relationship across the initial adoption to ongoing maintenance of the physical activity. The purpose of this presentation is to provide a review of the current evidence for M-PAC.

Methods: Eligible studies were from English, peer-reviewed published articles that examined M-PAC in the context of physical activity. Searches were completed in July 2017 in five databases.

Results: Fifteen observational studies and five experimental trials, from independent data-sets, primarily of high quality, were identified that spanned different physical activity populations (e.g., cancer survivors, dog walking, families, children with disabilities, middle aged adults, college students). Results from the observational studies generally supported the proposed reflective (affective judgments supported in 9/11 tests; perceived control supported in 12/15 tests), regulatory (supported in 7/8 tests), and reflexive (habit supported in 4/4 tests; identity supported in 4/4 tests) constructs of M-PAC as moderators of intention-behavior relations. Experimental application of M-PAC is preliminary but early evidence is also generally supportive of the reflective (affective judgments supported in 2/2 tests; perceived control supported in 2/4 tests), regulatory (supported in 4/5 tests), and reflexive (habit supported in 2/2 tests; identity supported in 3/3 tests) constructs as potential mediators of physical activity change.

Conclusions: Overall, contemporary research on M-PAC demonstrate its constructs may act as a bridge of the intention-behavior gap and, thus, augment traditional social cognitive approaches with additional considerations of affect and opportunity, self-regulation, and habits and identity formation. Still, the temporal aspects of M-PAC, in terms of adoption and maintenance, have had limited empirical attention and a higher volume of studies in different contexts is needed to validate these initial findings.

Symposium 24D

A META-ANALYSIS OF THE HEALTH ACTION PROCESS APPROACH AND HEALTH BEHAVIORS

Dr. Chun-Qing Zhang, Ph.D., M.Ed., B.Sc.

Objective: The Health Action Process Approach (HAPA) serves as a self-regulation framework focusing on both motivational and volitional stages of behavior change. It has demonstrated utility in predicting changes in health-related behaviors in a variety of settings. The purpose of this meta-analysis was to explore the consistency of proposed relationships among HAPA constructs across health-related behaviors and investigate effects of demographic and conceptually-determined moderators of effects on the HAPA relationships.

Methods: Five electronic databases (PsycInfo, Medline, Embase, Web of Science, and Scopus) for studies of HAPA and health behaviors were systematically searched. After the records were screened and assessed for eligibility, 96 correlational and experimental studies (116 independent data sets) testing HAPA hypotheses were identified. Relations among each HAPA construct was synthesized using random-effects meta-analysis. Proposed relations among HAPA variables were tested using path analytic structural equation modeling.

Results: The majority of the included studies focused on physical activity and dietary behaviors, and most of them were prospective in design with self-reported measures of behavior. Consistent with HAPA propositions, positive and significant relations were revealed among key HAPA variables and behaviors, including: outcome expectancies, task self-efficacy, intention, maintenance self-efficacy, recovery self-efficacy, action planning, coping planning, action control, past behavior, and behavior. Specifically, there were medium-to-large-sized correlations between behavior and the task self-efficacy, intention, maintenance self-efficacy, recovery self-efficacy, action planning, coping planning, and action control constructs with smaller effects between behavior, including outcome expectancies and risk perceptions, and the other HAPA variables.

Conclusions: Patterns of relations among HAPA variables were consistent with predictions. Consistent with primary research, it seems that effects of self-efficacy, intention, and planning variables are more pervasive than risk perceptions in explaining variance in health behavior. Building on the current meta-analysis, future research needs to provide more evidence of the HAPA model in diverse health behaviors (e.g., condom use, sunscreen use, smoking, dental flossing). The use of experimental design and objective measures are also recommended.

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Symposium 24E

PAST BEHAVIOR AND HABIT AND BEHAVIORAL AUTOMATICITY IN SOCIAL COGNITIVE MODELS: META-ANALYSIS AND TEST OF A PROCESS MODEL

Prof. Martin S. Hagger, PhD

Objective: Dual-process theories posit that health behavior is a function of automatic and deliberative processes. Inclusion of past behavior as a predictor in social cognitive theories has been purported to represent non-conscious processes, but has been criticized as lacking content and precision. Self-report measures of habit and automaticity have been proposed as an alternative approach to modeling non-conscious processes on health behavior in social cognitive theories. The current research examines past behavior and self-reported habit and automaticity as means to test non-conscious processes in social cognitive models of health behavior. To the extent that effects of past health behavior on future behavior reflects health habits, self-reported habit is expected to mediate the effect. The analysis is also expected to reveal the extent to which automaticity, as a specific component of habit, serves to account for past behavior effects.

Methods: A database search revealed 160 studies that measured self-reported habit or past behavior in social cognitive models applied to health behaviors. Based on data from included studies, meta-analytic structural equation modeling was used to test a dual-process model in which health behavior was predicted by a reasoned process involving intentions, attitudes, norms, and control beliefs, and a non-conscious process reflected by past behavior and habits. Effects of past behavior were proposed to be mediated by habit. Type of self-reported habit (habit vs. automaticity) was used as a moderator of habit and past behavior effects in the model.

Results: Models revealed independent effects of past behavior and intentions on health behavior. The direct effect of past behavior on behavior was mediated by habit, as predicted. However, past behavior had direct effects on behavior independent of the habit-mediated effect. Effects of past behavior and habit were not moderated by type of self-report habit measure, habit, or automaticity.

Conclusions: Current findings indicate that self-reported habit explains some of the effects of past behavior, even though a direct effect remained. Findings indicate that past behavior effects are, at least in part, due to habits. The remaining effect may account for implicit processes not modeled by habits, such as implicit attitudes. Current findings also indicate that habit mediated effects are not affected by whether the self-report measure reflects habits or automaticity alone.

Symposium 25

2:00 PM-3:15 PM

EXTENDING THE REACH OF MOTIVATIONAL INTERVIEWING IN HIV PREVENTION AND CARE: TAILORING DELIVERY AND TRAINING

Paula Bertone, MA¹, Tyrel J. Starks, PhD², Sylvie Naar, PhD³, Karen Ingersoll, Ph.D.⁴

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The HIV epidemic in the U.S. disproportionately affects youth, particularly younger men who have sex with men (MSM) and racial and ethnic minority youth. Increasing evidence points to the salience of main (as well as casual or anonymous) partners as a context for HIV infection, particularly for young MSM. These epidemiological factors necessitate the development of targeted intervention strategies which reach those youth at greatest risk of HIV infection. Motivational Interviewing (MI) interventions have shown specific promise in improving HIV-related outcomes and reducing HIV-risk and related substance use.

This symposium focuses on strategies, challenges, and discoveries encountered in research which seeks to adapt MI delivery and training to novel formats and populations. The initial presentation discusses the challenges of translating an existing MI-based intervention developed for young MSM ages 18–29 – the Young Men's Health Project (YMHP) – from a traditional in-person format to one which is delivered online to adolescents aged 13–18. Qualitative analysis of session content identified modifications necessitated by the intervention format and developmental needs of clients. The second presentation discusses the extension of MI – traditionally as an individually delivered intervention – to HIV and substance use prevention work with gay male couples. Utilizing a grounded-theory approach to the analysis of session content, the presentation outlines a set of theoretical principles which might guide MI with couples. The final presentation reports the results of mixed methods research intended to enhance MI training. This novel work begins with quantitative analysis of interactions between HIV care providers and racial and ethnic minority youth to identify specific MI skills that efficiently elicit change talk from this under-served and high-need population. This is combined with provider feedback on challenges to MI implementation. From these data, a tailored implementation strategy was developed to enhance MI uptake at clinics serving HIV positive youth. Together, these three presentations illustrate diverse approaches to the challenge of extending the reach of MI across populations, format and setting. Attendees at this symposium will therefore be exposed to the full spectrum of intervention development and implementation research. They will leave with an understanding of how the theoretical foundations of existing interventions can inform the tailoring of novel applications which extend the scope of available services to critical populations.

Symposium 25A

ADAPTING A FACE-TO-FACE MOTIVATIONAL INTERVIEWING INTERVENTION FOR ONLINE DELIVERY TO HIGH-RISK ADOLESCENT MALES

Ms. Paula Bertone, MA

Background: Traditional face-to-face HIV prevention programs are often unable to reach a significant proportion of young men who have sex with men (YMSM) at risk for HIV, due to challenges with recruitment and engagement in treatment. The difficulty of reaching adolescent YMSM ages 13–17 is even greater. To address this problem, the adaptation reviewed here sought to revise and tailor an evidence-based HIV prevention intervention, The Young Men's Health Project (YMHP). The original YMHP, a face-to-face Motivational Interviewing (MI) intervention, successfully reduced sexual risk and substance use behaviors among YMSM ages 18–24. We adapted YMHP for delivery online with adolescent YMSM between the ages of 13 and 17.

Methods: Participants were recruited through advertisements posted on Facebook and Instagram and had to pass four milestones in order to be considered fully enrolled in the intervention. Milestone 1 was sending a survey link; milestone 2 involved completing the at-home baseline survey; milestone 3 was obtaining consent for the full study; and milestone 4 involved participating in the intervention. Of the 508 surveys sent, 250 attempted, and 201 completed and were eligible to participate. Of those, 70 were invited for the full study, 40 consented and 26 participated in the intervention. We identified the major points of revision to the original YMHP intervention and documented the protocol evolution through two rounds of adaptation. Six participants from the first round provided feedback that was captured and evaluated using qualitative interviews, and helped shape the adapted intervention in the second round.

Lessons Learned: This adaptation generated both developmental and technology-related insights. We learned that adolescent YMSM have a need for psycho-education around sex and that motivation to reduce HIV risk may be activated through conversations focused on general sexual health - including an exploration of the youth's sexual identity, dating habits, and relationship preferences. We addressed this by providing all participants in the second round with access to an online sexual education program developed for LGBT youth. We discovered a heightened salience of family factors (i.e., parents playing an active role in regulating their son's lives), and that finding partners and dating are priorities for this population, especially for youth in more rural areas. Remote service delivery (via phone, Skype, FaceTime) also presented initial challenges in establishing rapport and scheduling, which, with further adaptations in the second round, were able to be overcome through increased engagement with the youth.

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Symposium 25B

EXTENDING MI TO COUPLES' HIV RISK AND RELATED SUBSTANCE USE: DERIVING AND ILLUSTRATING A THEORETICAL FRAMEWORK FOR PRACTICE

Dr. Tyrel J. Starks, PhD

Background: Main partners account for a substantial number of new HIV infections among gay and bisexual men (GBM). Relationship factors are also associated with drug use among GBM – enhancing HIV risk. Individually delivered Motivational Interviewing (MI) interventions have been effective in reducing drug use and sexual HIV transmission risk; however, research on couples generally – and GBM couples particularly – has been limited. The framework of MI has largely been articulated from an intra-individual perspective, and relatively little theoretical guidance has been offered for dyadic applications. The purpose of this formative study was to derive a framework informed by qualitative analysis of session content taken from MI sessions with GB couples targeting substance use and HIV risk reduction.

Method: Drawing upon existing MI-based approaches for individual GBM, the study's first author developed a 3 session intervention protocol for delivering MI to GBM couples. This protocol was administered to 10 GBM couples, in which at least one partner was aged 18–29; HIV-negative; and reported problematic alcohol use or the use of an illicit drug. Minimum relationship duration was 3 months. Masters and doctoral-level providers delivered all sessions, which lasted 50–75 minutes each. Session retention was 100%. We therefore reviewed transcripts from these 30 MI sessions. Utilizing a grounded theoretical approach, session content was coded for evidence of ambivalence toward the target behavior and MI processes (engaging, focusing, evoking, and planning). Codes were created to capture these processes at individual and interpersonal levels.

Results: Transcripts illustrated the potential for ambivalence to emerge at both the interpersonal and the intra-personal level. This allowed for the cultivation of change talk through therapist utterances directed at both the partners separately and the couple together. Relationship investment served as a catalyst for resolving interpersonal ambivalence in the direction of change. The process of resolving interpersonal ambivalence and developing a change plan for the couple can be understood as a special instance of the accommodation process conceptualized within Couples Interdependence Theory.

Conclusions: Brief MI is a feasible and acceptable strategy for addressing drug use and HIV-related risk with gay male couples. While the core concepts and skills of MI generalize to this work, it is necessary to conceptualize ambivalence and the processes of MI as dyadic rather than individual. The provider must interact with both the dyad and the individuals within it strategically to effectively elicit ambivalence and plan for change. MI providers working with couples must be open to the possibility that individual outcomes may be improved through improvements in dyadic functioning, which facilitates accommodation.

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Symposium 25C

TAILORING MOTIVATIONAL INTERVIEWING FOR IMPLEMENTATION IN ADOLESCENT HIV CARE SETTINGS

Sylvie Naar, PhD

Background: Although MI is part of the clinical guidelines for HIV care and risk reduction, training healthcare providers to proficiency in MI is costly and not always successful. A key tension in implementing evidence-based practice is balancing strict fidelity with flexibility in adapting to context. The goal of this study was to utilize communication science and the dynamic adaptation process to tailor MI for implementation in adolescent HIV care settings with a specific focus on service delivery with racial and ethnic minority youth.

Method: For the communication science component, we analyzed 69 audio-recorded patient-provider encounters with racial and/or ethnic minority identified HIV-positive youth. Which were transcribed and coded using the Minority Youth Sequential Coding for Observing Process Exchanges. Encounters were randomly assigned to two coders with 20% co-coded for inter-rater reliability ($k=.684$). Sequential analysis was used to identify provider behaviors that elicited patient motivational language. For the dynamic adaptation process component, we conducted qualitative interviews with key stakeholders in two pilot sites utilizing the Exploration, Preparation, Implementation, Sustainment (EPIS) model. Interviewers completed rapid content analysis immediately following each interview to capture their impressions of themes in the interviewee's response content and observations of the interviewee for each EPIS category plus an overall summary. The interviewers' feedback was then compared across interviewees to identify recurrent themes.

Results: Provider questions (open and closed) were the communication strategy most likely to elicit change talk (CT) and commitment language (CL). Specifically, closed questions phrased to elicit CT did so 66% of the time and open questions did 57%. Closed questions phrased to elicit CL did so 71% of the time and open questions did 57%. Questions phrased to elicit counter change talk (CCT) were also likely to elicit CCT (closed 68%, open 73%) but reflections of ambivalence (75%) were more likely to elicit CCT and reflections of CCT were nearly as likely (53%). All $p<.05$. For the dynamic adaptation process component, major themes noted in the qualitative interviews were that the clinic environment was very busy and that intervention activities might be too time consuming. However, MI was a good fit for the staff, and planned implementation and sustainability strategies were well designed.

Conclusions: MI implementation strategies were adapted and feasibility tested using these data including workshop content and follow-up coaching plans. The resulting implementation intervention (TMI; Tailored Motivational Interviewing) is currently being tested in dynamic wait-list controlled design in 11 adolescent HIV clinics as part of the Adolescent Trials Network for HIV/AIDS Interventions.

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Symposium 26

2:00 PM-3:15 PM

APPLYING DEVELOPMENTAL SCIENCE TO CHANGE HEALTH BEHAVIORS IN VULNERABLE CHILDREN

Sarah E. Domoff, PhD¹, Larissa N. Niec, PhD², Amanda E. Staiano, PhD³, Aaron D. Fobian, PhD⁴, Alan M. Delamater, PhD⁵, Alison Miller, PhD⁶

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Engaging parents in health interventions is critical to initiate and sustain health behavior change in children and families. Reaching parents and achieving successful treatment completion is challenging, especially for families already experiencing barriers and service disparities. This symposium addresses the SBM 2018 Conference Theme, "Extending our Reach," by showcasing four interventions that specifically target parents and/or parenting processes to effectively reach vulnerable children and their parents and facilitate health behavior change.

The four papers in this symposium examine intervention development and effectiveness for children from four distinct stages of development: early childhood (Paper 1), late childhood/early adolescence (Paper 2), mid-adolescence (Papers 3 and 4), and late adolescence (Paper 3). Across papers, the interventions extend our reach by targeting a diverse group of historically underserved children and families (e.g., families from racial/ethnic minority backgrounds, living in rural regions of the US and in urban at-risk areas). Each paper will expand upon the integration of developmental science and theory into the design and implementation of interventions addressing important health domains such as childhood obesity (Paper 1), physical activity (Paper 2), sleep (Paper 3), and diabetes management behaviors (Paper 4).

Paper 1 will describe an innovative obesity prevention intervention informed by attachment theory and social learning theory. The authors will describe the importance of addressing the parent-child relationship as a novel obesity prevention target, especially for families with high stress and parent-child conflict, and will describe the adaptation of an innovative technique for eliciting behavior change that has demonstrated large effect sizes in its original format. Paper 2 will detail the GameSquad Study, which utilizes video chat and gaming exercise to promote physical activity in a racially diverse sample of overweight/obese children and their parents. Paper 3 will describe the effects of a group adolescent sleep intervention that integrates parents in the treatment. The final paper will describe a family-based self-management intervention program for minority adolescents with Type 1 Diabetes. In this intervention, effective parental communication, collaborative involvement, and problem-solving are facilitated to promote diabetes regimen adherence. The symposium will conclude with a discussion amongst the speakers and attendees about how to apply developmental science to improve our reach and close gaps in intervention dissemination.

Symposium 26A

UTILIZING PARENT-CHILD INTERACTION THERAPY TO PREVENT CHILDHOOD OBESITY: A NOVEL APPLICATION FOR HIGH-RISK FAMILIES

Dr. Sarah E. Domoff, PhD

Parents are critical to establishing healthy eating and activity behaviors in their children and preventing obesity (Birch & Ventura, 2009). Warm, responsive, and consistent parenting (i.e., authoritative parenting) is associated with a lower prevalence of child obesity (Anderson et al., 2012; Connell & Francis, 2014). Longitudinal studies have documented the links between parenting style and quality of parent-child interactions and child obesity status (Anderson et al., 2012). Improving how parents interact with children in general and in health salient (e.g., mealtime, feeding) contexts is especially critical for families experiencing ongoing stressors, such as unemployment and poverty. Parent-child conflict is higher in families with ongoing stressors, such as greater economic disadvantage (O'Connor et al., 2015). Therefore, prevention efforts that improve the parent-child relationship and parenting are particularly needed for children at higher risk.

In recent years, obesity prevention programs have begun to target general parenting practices to prevent obesity risk in children (Haines et al., 2016; Østbye et al., 2012). Despite growing involvement of parents in such prevention efforts, there has been limited evidence for preventing excess weight gain. A reason for the limited efficacy in obesity prevention programs may be *which* aspects of parenting are the target of the intervention. Although several obesity prevention programs have addressed parental *knowledge* of nutrition and physical activity guidelines (Skouteris et al., 2011) and a smaller number have addressed general parenting practices, (Gerards et al., 2011), none to our knowledge, have explicitly targeted improving the parent-child relationship via enhancing warm and responsive interactions in order to prevent obesity.

In this paper, we describe the development of an adapted version of Parent-Child Interaction Therapy (PCIT), an evidence-based behavioral family intervention designed to improve the behavior regulation of children ages 2.5 to 7 years, enhance parenting effectiveness, and improve the quality of the parent-child relationship. This adapted intervention, PCIT-Health, is informed by attachment theory and social learning theory (Eyberg & Funderburk, 2011; McNeil & Hembree-Kigin, 2010). During the first phase, Child Directed Interaction, parents learn child-centered interaction skills to enhance the parent-child relationship. During the second phase, Parent Directed Interaction, parents learn healthy, developmentally appropriate discipline skills. PCIT-Health, maintains all the core components of PCIT (e.g., behavioral assessment, in vivo coaching, relationship enhancement, and discipline skills), and adds an intervention module (Health Directed Interaction) to specifically target obesity risk.

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Symposium 26B

ENGAGING PARENTS AND OVERWEIGHT/OBESE CHILDREN IN PHYSICAL ACTIVITY USING VIDEO CHAT AND GAMING TECHNOLOGY

Dr. Amanda E. Staiano, PhD

Background: Insufficient physical activity is a contributor to obesity, which affects one in five U.S. children. Given children spend on average 62 hours/week engaged in screen-time, leveraging digital screens to provide physical activity tools and virtual counseling support may be an innovative way to promote sustained moderate-to-vigorous physical activity (MVPA) among families.

Methods: The GameSquad study was a 6-month, 2-arm randomized controlled trial among 46 overweight/obese children (aged 10 to 12 years) assigned to a 6-month exercise intervention or a wait-list control group. The exercise intervention was grounded in social cognitive theory by reinforcing parental modeling and promoting children's self-efficacy. An exergaming console with four exergames and an exergaming curriculum were provided to promote family exergame play at home (3 hours/week), a fitness specialist did video chats with the parent-child dyad every 1–2 weeks, and children were provided with a FitBit for self-monitoring of physical activity. Children in the wait-list control received the exergaming console and games at the end of the 6-month period. Children completed psychosocial surveys and wore an Actigraph accelerometer for 7-days prior to and after the intervention. Minutes of MVPA were calculated from accelerometer data using Treuth cutpoints. Two-tailed t tests were used to examine difference scores between conditions in MVPA minutes/day and self-efficacy towards physical activity.

Results: Participants were predominantly male (54%) and African American (57%). Adherence to min/week of subscribed exergaming was 94.4%, and parent/child adherence to video chats was 85.5%. Most children (73%) reported usually exergaming with a parent or sibling/cousin. Compared to the control group, the intervention group significantly increased MVPA ($p=0.04$, +3.1 min/day vs. -3.7 min/day in the control group). Compared to the control group, the intervention group significantly increased self-efficacy towards physical activity ($p = 0.01$).

Conclusion: This video chat and gaming exercise intervention effectively engaged parents and children for a 6-month period and increased children's levels of MVPA. Screen-based technology offers an opportunity to support families in joint physical activity to promote healthy habits.

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Symposium 26C

EFFICACY OF A GROUP ADOLESCENT SLEEP AND MEDIA USE INTERVENTION AND UTILIZING PARENTS IN TREATMENT

Dr. Aaron D. Fobian, PhD

Introduction: Research has shown that adolescents do not obtain adequate sleep, especially during the school week. Currently, few well-controlled studies assessing behavioral interventions for sleep in adolescents are available, and this study aims to assess the efficacy of an adolescent sleep intervention.

Methods: Twenty adolescents aged 15–17, who slept less than 8 hours on average were recruited (M age=16.05, SD=0.76; 65% female; 50% African American, 45% Caucasian, 5% Hispanic). Participants were randomly assigned to either a sleep intervention (n=10) or a study skills intervention (n=10). Each intervention consists of 4 group sessions consisting of 3–6 adolescents and their parents. The sleep intervention utilizes cognitive behavioral principles applied to sleep and media use. Because parents' behavior has been found to be strongly associated with adolescents' behavior, parents were significantly involved in the intervention. The study skills intervention taught evidence-based study skills and also included parental involvement. Sleep quality and quantity was measured by actigraphy at baseline, throughout the sleep intervention, and at follow-up. Change scores (post-pre) were completed to assess change in sleep for each participant. Independent samples t-tests were conducted to assess differences in change in sleep between participants in the sleep intervention and those in the study skills intervention. This is part of a larger study aimed at assessing the effects of increased sleep on metabolism and body composition. Participant recruitment is ongoing, and more data will be available at the time of presentation.

Results: Adolescents in the sleep intervention significantly increased their sleep by an average of 36 minutes as compared to the sleep of those in the study skills intervention, which decreased by 6.6 minutes on average, $t(18)=2.59$, $p=0.02$. There were no missing data.

Conclusions: A CBT-based sleep intervention that integrates parents is effective for increasing adolescents' sleep duration. The majority of adolescents do not obtain adequate sleep, and this short-term, group intervention is a cost effective way to target this problem. Additionally, this emphasizes the merit of utilizing parents in adolescent interventions. This intervention can be used to assess the impact of increasing adolescents' sleep on other health factors such as reducing obesity and risk for type 2 diabetes.

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Symposium 26D

FAMILY-BASED SELF-MANAGEMENT INTERVENTION PROGRAM FOR MINORITY ADOLESCENTS WITH TYPE 1 DIABETES

Prof. Alan M. Delamater, PhD

Minority youth with type 1 diabetes are at increased risk for poor metabolic control. We developed a family-based intervention program utilizing motivational interviewing (MI) for youth and conducted a controlled pilot test of its efficacy. Exploratory focus groups and pre-testing informed program development. Six sessions were delivered over 12 weeks, with three monthly follow-up visits. Results of the pilot showed improvements for dietary behaviors ($p<.04$), management of hypoglycemia ($p<.03$), and blood glucose monitoring (BGM; $p<.04$). Although there were no significant changes in glycemic control, 54% of youth receiving the family-based MI program improved or maintained their glycemic control versus 31% of youth receiving standard care. Intrinsic motivation (IM) for diabetes management (DM) increased over time for youth in both groups ($p<.001$), and higher baseline IM predicted increased DM behaviors ($p<.01$) and better glycemic control ($p<.03$) six months later. These pilot findings demonstrated the initial efficacy of the family-based MI program and the importance of IM for DM.

The program focuses on youth making specific goals related to BGM, food intake, insulin use, and family communication about DM. Information is provided for youth and parents about these regimen components and effective parental communication, collaborative involvement and problem-solving. Youth select the issues they want to work on and set specific weekly goals; parents monitor and support goals for their children as well as their own goals to promote teamwork, with weekly tracking of success. With every goal, youth rate the importance and confidence they feel related to it, and the goal is linked to personally selected values to promote IM. The program addresses key DM behaviors shown to improve glycemic control, including increased frequency of BGM and bolusing of insulin, and accurate carb counting. The program also focuses on key psychosocial factors to promote these behaviors, including goal-setting, monitoring, and collaborative parental involvement.

The program's theoretical foundation is Social Cognitive Theory (SCT), in which behavior is determined by environmental, cognitive, and affective factors. Recent developments of interventions based on SCT include MI, which is based on self-determination theory. The intervention is also informed by intervention research to promote family teamwork and support by parents to their children in developmentally appropriate ways.

Symposium 27

2:00 PM-3:15 PM

INTERVENTIONS FOR CHRONIC PAIN IN PRIMARY CARE: A FOCUS ON EVALUATION

Jennifer S. Funderburk, PhD¹, Kathryn Kanzler, PsyD, ABPP², Gregory P. Beehler, PhD, MA³, Jeffrey Goodie, Ph.D., ABPP⁴, Alicia Heapy, PhD⁵

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More than 100 million Americans have chronic pain and most obtain care in primary care settings, where they do not usually receive evidence-based psychological treatments for pain. The increasing number of behavioral health providers embedded in primary care has led many systems to search for evidence-based treatments for chronic pain to implement. However, there lacks any brief evidence-based treatments targeting pain that fits typical models of integrated primary care service delivery. As a result, systems and integrated providers are developing treatments for pain to implement and there is an opportunity to conduct research on how they are approaching this problem. This symposium will have three presentations that will focus on how three different groups of people approached this issue, sharing their intervention for chronic pain, design of the evaluation, and outcome measures. Following introductions, the chair will introduce the idea for the need for greater participation by clinician innovators in conducting these evaluations and how these presentations provide glimpses into the types of designs and outcomes that can feasibly be used. The first presenters will discuss their research, involving a population-health based approach to studying treatment of chronic pain using Acceptance and Commitment Therapy in a primary care behavioral health clinic. Our second presenter will review their implementation study transporting brief Cognitive Behavioral Therapy (CBT) for pain within the Veterans Affairs primary care system. Our third presenter will review the design and methods of a proposed large-scale pragmatic trial in the Department of Defense healthcare system that utilizes diverse CBT interventions. Our discussant will focus on these projects in the context of dissemination and implementation science, allowing time for discussion and interaction with attendees.

Symposium 27A

EVALUATING ACT FOR CHRONIC PAIN IN INTEGRATED PRIMARY CARE WITH A POPULATION HEALTH-DRIVEN RCT

Dr. Kathryn Kanzler, PsyD, ABPP

Although internal behavioral health consultants in primary care have the skills to enhance treatment of chronic pain, research examining their effectiveness is lagging. While there are many techniques to study and intervene in primary care, we selected an RCT with a population health approach, which involves focusing on “the health outcomes of a group of individuals, including the distribution of such outcomes within the group” (Kindig & Stoddart, 2003). In this presentation, we will discuss our choice of clinical pathway intervention regarding the use of Acceptance and Commitment Therapy (ACT) for patients with persistent pain. Then, we will discuss our evaluation strategy using a grant-funded pilot RCT and the decisions regarding outcome measures, including challenges and successes using preliminary findings. We will recommend future steps to stimulate evaluation of evidence-based interventions in primary care, ultimately improving the quality of care and functioning for patients with chronic pain.

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Symposium 27B

BRIEF CBT FOR CHRONIC PAIN: DEVELOPMENT AND IMPLEMENTATION OF A PROTOCOL FOR INTEGRATED PRIMARY CARE

Dr. Gregory P. Beehler, PhD, MA

Integrated primary care programs can play a key role in delivering biopsychosocial care for chronic pain. However, to date, there has not been a widely accepted protocol for CBT for chronic pain that is well-suited for integrated primary care settings. This presentation will describe the development and initial dissemination of Brief CBT for chronic pain (Brief CBT-CP) to Veterans Affairs (VA) integrated primary care clinics. Brief CBT-CP was adapted from the VA's full length gold standard CBT intervention to fit the Primary Care Behavioral Health model of integrated care. This protocol is shorter in duration (~3 hours total) than the original protocol (up to 12 hours) and includes six, 30-minute sessions. Brief CBT-CP strongly emphasizes measurement-based care to monitor response to treatment through the routine use of brief validated measures of pain and functioning. Immediately following protocol development, and in response to high demand for increased support for pain management in primary care, our team developed a clinical demonstration project to rapidly implement Brief CBT-CP in select VA integrated care clinics. We will describe the process of developing evaluation tools to support preliminary assessment of protocol feasibility and effectiveness as well as patient satisfaction. This project included the creation of an implementation plan designed to assist frontline providers with administering Brief CBT-CP. Integrated care providers attended a 60-minute orientation webinar that focused on the content and structure of Brief CBT-CP. Monthly Community of Practice calls were used for group discussion and provided a venue for technical assistance regarding implementation of the protocol. As-needed email and phone consultations were provided by the project team. We will review the results of evaluation data collected from providers at project mid-point and conclusion. These web-based surveys were used to identify barriers and facilitators impacting implementation of Brief CBT-CP and suggestions for future modification to the protocol and implementation approach. Lessons learned from patient satisfaction data from a subsample of Brief CBT-CP participants will also be discussed. In summary, this presentation will provide a real-world example of how to plan and execute a feasible approach for evaluating a rapid implementation of a new brief treatment for chronic pain in integrated primary care.

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Symposium 27C

USING PRAGMATIC TRIAL DESIGNS TO EXAMINE IBHC INTERVENTIONS FOR CHRONIC PAIN IN PRIMARY CARE

Dr. Jeffrey Goodie, Ph.D., ABPP

Chronic pain is an increasing problem for beneficiaries in the Department of Defense. It is estimated that 50% of deployed military members are expected to return with pain conditions. Most (i.e., 84%) primary care clinics throughout the Department of Defense that have at least 3000 enrollees have an internal behavioral health consultant (IBHC). Although clear guidance for management and behavioral treatment of chronic pain in primary care settings by IBHCs has been disseminated, the effectiveness of these management strategies has not been examined. Our team recently proposed a multi-site pragmatic trial to evaluate the effectiveness of IBHCs in treating chronic pain using an advanced clinical pathway. Pragmatic trials are designed to examine the effects of an intervention under the usual conditions in which it would be implemented. For example, pragmatic trials encourage inclusion of any patients with the presenting problem while minimizing exclusion criteria, interventions are provided by a full range of practitioners, the implementation of the intervention is highly flexible, and measured outcomes are clinically meaningful to study participants. We will present our proposed study's rationale and unique design, including a stepped-wedge approach across sites, combining elements of population health interventions and team-based care, utilizing a pragmatic trial approach.

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Symposium 28

2:00 PM-3:15 PM

SPATIO-TEMPORAL MODERATORS OF HEALTH BEHAVIOR INTERVENTIONS: NEW METHODS AND RESEARCH EVIDENCE

Mark Hatzenbuehler, PhD¹, Blair T. Johnson, PhD², John Pachankis, PhD³, Allecia Reid, PhD⁴¹Columbia University, New York, NY; ²University of Connecticut, Storrs, CT; ³Yale University, New Haven, CT; ⁴Colby College, Waterville, ME

It is well known that individual-level factors (e.g., age, sex, personality characteristics) render health interventions more or less effective, but the contextual factors that impact the efficacy of these interventions are only beginning to be understood. Reid and colleagues (2014) conducted one of the first studies to demonstrate that intervention context exerts a powerful effect on intervention efficacy. The researchers re-analyzed a meta-analytic database with information on effect sizes from 78 HIV prevention interventions targeted toward African Americans, and took advantage of the fact that these interventions took place across the U.S. in communities that differed widely in terms of the level of structural stigma surrounding African Americans (operationalized via measures of anti-black attitudes). Interventions improved condom use only when communities had relatively positive attitudes toward African Americans. Conversely, the interventions did not reduce condom use when conducted in communities with high levels of anti-Black prejudice. This research opens up new avenues for exploring whether and why health behavior interventions flourish in some social contexts but often fail in others.

The goal of this symposium is to advance this evidence base on contextual moderators of intervention efficacy through three presentations. First, Dr. Johnson will discuss new methods for exploring contextual moderators of intervention efficacy, with a particular focus on the use of spatio-temporal meta-analyses. Second, Dr. Pachankis's study will examine whether structural stigma related to sexual orientation—including state laws targeting lesbian, gay, and bisexual (LGB) populations (e.g., lack of protections for sexual orientation in hate crime and employment non-discrimination statutes)—reduces the effectiveness of mental health treatments for LGB young adults, using new data from a large-scale study of mental health treatment across 154 college campuses. Third, Dr. Reid's study will examine whether the efficacy of interventions to improve African Americans' condom use depends on contextual features of the communities where interventions occurred (e.g., residential segregation). Following these presentations, the discussant will consider implications for future research and intervention development, such as the need for designing and testing modules that can be added to existing interventions to make them maximally responsive to diverse social contexts.

Symposium 28A

SPATIOTEMPORAL META-ANALYSIS AND HEALTH PROMOTION INTERVENTIONS: NEW METHODS AND FINDINGS

Prof. Blair T. Johnson, PhD

Individual health promotion interventions are studies conducted in particular places at particular times. Like all studies, they are distributed over time and space. The results of such studies manifest multiple processes, including those associated with individual, sample, intervention, study design, and environmental characteristics. Although extant meta-analyses of health promotion interventions routinely consider such study- and population-level factors to explain variability, they often neglect the environments where studies are conducted. This omission is ironic, as health phenomena cluster in space and times (e.g., the obesity epidemic). The settings in which study participants live, work, and play are characterized by such environmental factors such as prevalence of disease, weather trends, local and broad economic trends (e.g., income inequality), the built environment (e.g., parks, sidewalks), allostatic load due to all causes, and the level of stigmatization of minority groups. For example, the degree of stigma associated with being a racial or sexual minority varies widely over space and often over time within the same locale. **Spatiotemporal meta-analysis** endeavors to address heterogeneity in environments present in individual studies by combining information known about the locales when the studies were conducted. Logically, to the extent that relevant spatiotemporal information on environmental conditions is available and varies widely, it may explain variability in study results that is not explained by individual, sample, study, or intervention features: e.g., for obesity epidemics, safe neighborhoods, walkable roads and “food desert” areas are known important environmental factors. There are challenges in developing spatiotemporal meta-analyses, as it necessitates geocoding spatial information, which sometimes is not available in detail. Moreover, the strategy logically works best when there are many studies available and when theory supports clear hypotheses about which spatiotemporal factors relate to health outcomes. We discuss these challenges and future directions for this form of systematic reviewing methodology, such as the use of residuals plotted over space to diagnose unrecognized, but spatially clustered dependencies in the observations. Because the success of health promotion activities introduced in a particular locale are subject to forces in and surrounding that locale, both during and after the intervention has ceased, a spatiotemporal approach offers considerable heretofore unrecognized analytic potential not only in meta-analyses but also in original investigations.

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Symposium 28B

THE INFLUENCE OF STRUCTURAL STIGMA ON PSYCHOTHERAPY OUTCOMES AMONG SEXUAL MINORITY COLLEGE STUDENTS

Dr. John Pachankis, PhD

While psychotherapy can improve the mental health of stigmatized populations, it is unknown whether the stigma present in the climate in which psychotherapy is delivered influences treatment efficacy. Sexual minority individuals (e.g., those who identify as LGBTQ) are at high risk for mental disorders and are three times as likely as heterosexuals to use mental health services. However, little is known about the efficacy of psychotherapy for this population. Even less is known about the influence of structural stigma (e.g., state homophobia) on psychotherapy outcomes for sexual minorities. In high-stigma locales, psychotherapy's effects might not be able to compete with the systemic and personal toll of pervasive discrimination. However, a lack of treatment outcome data from sexual minority clients across geographically diverse locales precluded examination of this possibility until recently. To address this knowledge gap, our team used a novel dataset from the Center for Collegiate Mental Health with outcome data for 15,811 students ($n = 1,969$ sexual minorities) who received psychotherapy at 116 college counseling centers across 38 states in the US, providing a rare opportunity to assess whether variation in structural climates surrounding sexual minorities in the US predicts geographic variations in the efficacy of psychotherapy for this population. Participants completed weekly assessments of depression, generalized anxiety, social anxiety, and alcohol use across treatment. State-level stigma was measured as laws affecting sexual minorities. To account for the nested data structure (i.e., repeated measures within participants within campuses and states), multilevel modeling will be employed to examine our hypothesis that structural stigma will moderate the effect of psychotherapy on mental health symptom trajectories across treatment, such that sexual minorities who receive treatment in structurally stigmatizing climates, compared to supportive climates, will experience lower benefit from treatment. We propose that this effect will be specific to sexual minorities, as structural climate is not hypothesized to affect treatment outcomes for heterosexual clients. Findings are expected to support the need for structurally supportive institutional climates, LGBTQ-affirmative trainings in college counseling centers, and LGBTQ-affirmative treatment adaptations to improve therapeutic outcomes among this vulnerable, underrepresented segment of the US population.

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Symposium 28C

COMMUNITY-LEVEL RESOURCES AND SUCCESS OF HIV INTERVENTIONS FOR AFRICAN AMERICANS: A META-ANALYSIS

Allecia Reid, PhD

The Network-Individual-Resource Model proposes that the communities in which individuals live serve as negative or positive resources. Interventions are therefore less likely to succeed when participants must alter behavior in communities that lack important tangible or psychological resources, unless interventions explicitly address these needs. We examined the extent to which efficacy of interventions to improve African Americans' condom use practices depended on availability of community-level tangible and psychological resources, including unemployment and Whites' attitudes toward African Americans. A previously published meta-analytic database was updated and re-analyzed to examine whether community-level resources were associated with sexual risk reduction effect sizes. HIV prevention trials with samples that were at least 50% African American were included. County-level unemployment and Whites' attitudes were drawn from the U.S. Census and the nationally representative, American National Election Studies. For significant factors, we also examined whether intervention content that addressed the implied needs further moderated the effect.

Interventions were most successful when unemployment was lower and Whites' attitudes were more positive. Unemployment became non-significant in a combined model. Sensitivity analyses demonstrated that the effect of Whites' attitudes was especially pronounced among African American men but was significant for African American women. The effect of unemployment was consistent across groups. Intervention features that reduce African Americans' mistrust of providers may buffer against the influence of Whites' attitudes. Although utilizing African American facilitators to deliver the intervention did not moderate the effect, tailoring content to participants' values and needs buffered against the negative influence of Whites' attitudes. Residuals provided further information on factors associated with interventions for which efficacy deviated from expected results. Consistent with our focus on community resources, communities with interventions, compared to those without, had larger African American populations, lower median incomes for Blacks, higher income inequality, and higher unemployment. While promising that the communities most lacking in resources are receiving interventions, results highlight the role of community-level resources in maintaining racial/ethnic disparities in HIV and impeding the efficacy of health interventions.

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Symposium 29

2:00 PM-3:15 PM

NEW SOLUTIONS TO OLD PROBLEMS: IMPROVING WOMEN'S PERINATAL MENTAL HEALTH

Pamela A. Geller, Ph.D.¹, Mona Elgohail, M.S.², Emily C. Stasko, M.S., M.P.H.³, Christina DiSanza, MA¹, Sara Kornfield, PhD⁴

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Women can experience a variety of adverse reproductive-related events surrounding the perinatal period. For many, the experience of achieving and maintaining pregnancy is largely uneventful, while others may confront considerable challenges such as infertility and preterm delivery. Moreover, the postpartum period, even following an uneventful pregnancy, can be a time of tremendous stress as women transition to their new role and seek to balance infant care, work, family, and self-care. Such perinatal experiences are accompanied by severe psychological distress for many women, with about 20% experiencing significant perinatal depression and anxiety. This rate is substantially higher for high risk populations, such as mothers of infants with a Neonatal Intensive Care Unit (NICU) hospitalization. Perinatal mental health problems can impact daily functioning, couple and family relationships, and maternal-infant attachment. While these issues are not new, there is growing recognition of the need to address this distress early and effectively to improve outcomes for women, children, couples and families.

This symposium introduces creative ways to alleviate perinatal distress for women through innovative psychosocial interventions. Four novel projects offer original perspectives on the implementation of protocols that can serve as models and extend our reach to diverse populations, address barriers to care, and promote the treatment of perinatal distress using relevant and unique approaches. The first presentation introduces an international project implementing an internet-based intervention utilizing religious cognitive behavioral therapy (iRCBT) to reduce depression in Muslim women experiencing infertility. The second presentation discusses Let's Get Sexy!—a program examining the impact of a new technology-driven intervention on intimacy and sexual satisfaction among women undergoing fertility treatment. This project expands the traditional focus on mental and physical dysfunction to address women's experiences of sexual agency, satisfaction, and intimacy while trying to conceive. The third presentation describes Mother Baby Connections — an intensive outpatient treatment program delivering interdisciplinary evidence-based services with an attachment focus that is newly developed for women experiencing depression and anxiety during the perinatal period. The fourth presentation describes Mindful NICU, a novel adaptation of a mindfulness-based stress reduction intervention integrated in a Level IV NICU. Together, these projects address ways to alleviate perinatal distress using innovative psychosocial interventions that can be integrated into outpatient practice, hospital, and collaborative care settings.

Symposium 29A

INTRODUCING MOTHER BABY CONNECTIONS: A MODEL OF CREATIVE PERINATAL MENTAL HEALTH PROGRAMMING

Dr. Pamela A. Geller, Ph.D.

Perinatal mental health problems are associated with significant morbidity and mortality among childbearing women. Approximately 20% of women experience mental health problems during the perinatal period, with higher rates among vulnerable populations; yet only 20 to 25% receive adequate treatment, warranting novel and creative approaches to provide accessible, perinatal-specific mental health treatment while reducing barriers to engagement in care. To meet this need in the greater Philadelphia area, we introduce *Mother Baby Connections (MBC)*, an innovative model of interdisciplinary, evidence-based, attachment-focused intensive outpatient perinatal mental health programming recently launched at Drexel University. *MBC* aims to reduce antepartum and postpartum psychiatric symptoms and improve maternal functioning through individual, couple and group treatment formats, including evidence-based Mother-Baby Interaction Therapy. This presentation will provide an overview of *MBC* and its components, highlighting the novel and unique factors that differentiate this program from traditional outpatient treatment. We also will discuss baseline to 4-week clinical outcomes (utilizing scores from reliable and valid scales) from the first 18 months of *MBC* operation. In sum, based on both parametric paired *t* and non-parametric Wilcoxon signed ranks tests, outcomes for 15 predominantly minority women with completed outcome measures showed significant improvements in maternal depression symptom severity, perceived stress, and emotional regulation. Effect sizes were medium to large (i.e., .50 to .89). The perinatal mental health training and research aspects of the program also will be described.

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Symposium 29B

FAITH & FERTILITY: THE DEVELOPMENT OF A CBT-BASED INTERVENTION FOR MUSLIM WOMEN EXPERIENCING INFERTILITY

Mona Elgohail, M.S.

Infertility is a chronic health condition that affects millions of women each year, with many also suffering from depression. Depression may increase the risk of experiencing infertility, as well as decrease the success rate of infertility treatment. Our recent study of Muslim women living in western countries found that despite a high prevalence of infertility-related stress and depression in the sample, only 7% of participants reported that they were engaged in psychotherapy. Findings also suggested that this population often turns to religion/spirituality (R/S) to cope with emotional distress. This is consistent with previous research in which Muslims endorsed several barriers to seeking psychotherapy (e.g., fear of being stigmatized, lack of R/S integration). Consequently, Muslim women diagnosed with infertility need a psychotherapy that not only reduces depressive symptoms, but is private, convenient, and religiously integrated. Cognitive-behavioral therapy (CBT) has been effective in decreasing distress among Muslims and improving pregnancy rates among women with infertility. Thus, CBT that integrates R/S may be the most effective in alleviating distress in this population. The current study is the first to test an internet-based religious cognitive behavioral therapy to mitigate depression in Muslim women experiencing infertility and living in Australia, Canada, the United Kingdom, and the United States. This novel intervention will be described and preliminary data will be presented.

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Symposium 29C

LET'S GET SEXTY! A NOVEL INTERVENTION TO IMPROVE SEXUAL SATISFACTION DURING FERTILITY TREATMENT

Ms. Emily C. Stasko, M.S., M.P.H.

It is well established in the literature that infertility is linked to numerous negative psychological sequelae, including anxiety, depression, stress, and overall distress (Domar, Broome, Zuttermeister, Seibel, & Friedman, 1993; Downey et al., 1989; Downey & McKinney, 1992; Freeman et al., 1985; Mahlstet et al., 1987). Women report that the medicalization of their bodies and sex lives is a cognitively distressing and often a dehumanizing ordeal. Unsurprisingly, both sexual and relationship satisfaction tend to diminish during struggles with infertility (Galhardo, Cunha, & Pinto-Gouveia, 2011; Pepe, & Byrne, 1991). Let's Get Sexy! is a program examining the effect of a new technology-driven intervention on intimacy and sexual satisfaction among women undergoing fertility treatment. By conceptualizing sexting (sending or receiving sexually suggestive or explicit messages, images, or photos through electronic means) as a form of sexual communication by which women undergoing infertility treatment may feel empowered and thereby improve their sexual satisfaction with their partners during a timeframe noted to be extremely stressful and challenging for women and couples. The proposed presentation describes the development, implementation, and findings from this novel 'Sext Education' intervention. Results will examine the connection between sexting, sexual communication, intimacy, and sexual satisfaction. This study expands the traditional focus on mental and physical dysfunction to address women's experiences of sexual agency, satisfaction, and intimacy while trying to conceive. For the large number of women experiencing infertility in the US annually, this program holds the potential to help focus behavioral interventions on women's experiences of pleasure and satisfaction during a psychologically challenging and sexually disruptive time period.

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Symposium 29D

HERE & NOW: PARENTAL MINDFULNESS IN THE NICU

Christina DiSanza, MA

Rates of psychological distress, including depression, anxiety, and posttraumatic stress disorder, are substantially higher for parents of infants admitted to a neonatal intensive care unit (NICU). For parents of infants who've been discharged from a NICU, elevated symptoms of stress often persist as the child grows and develops. Parental stress, anxiety, depression and fatigue can negatively alter parenting behavior and perception of parental competence, ultimately impacting attachment and child development. At this time, there is a dearth of stress-reduction programs adapted and accessible for parents of infants who spend time in a NICU. Mindfulness-based interventions are efficacious at reducing stress among clinical and community samples, including perinatal populations. The current study examines the feasibility and acceptability of implementing, "Mindful NICU", a newly developed mindfulness-based program adapted for NICU parents and its preliminary impact on parental stress. Mindful NICU is a 6-session, 6-week, mindfulness-based program adapted for parents who have an infant in the Chronic Lung Disease Program in the Newborn/Infant Intensive Care Unit (N/IICU) at Children's Hospital of Philadelphia. The current study will report on two trials of Mindful NICU among 10 parents each. Parents will complete self-report measures of stress, mental health symptoms, and mindfulness-pre-and-post intervention. Infant chart reviews and infant health severity are conducted by staff to corroborate parental stress levels and to inform response to the program. The feasibility and acceptability of the program will be determined by assessment of attendance rates, exit surveys, and a 4-week follow-up exit interview. Descriptive analyses and bivariate correlations will be conducted on the primary variables (i.e. parental stress, NICU-related stress, mindfulness development). The current study will highlight the acceptability and promise of integrating mindfulness-based interventions within the NICU setting. These findings will help inform a larger randomized controlled trial of Mindful NICU as a means to assess the efficacy of this innovative program for reducing NICU parental distress.

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Symposium 30

2:00 PM-3:15 PM

FROM BEHAVIOR TO BIOLOGY: EXPLORING LINKAGES BETWEEN HEALTH AND RISK BEHAVIOR AND BIOMARKERS OF DISEASE PROCESSES

Angela Bryan, PhD¹, Rebecca Ferrer, PhD², Emmanuel Mongodin, PhD³, William Klein, PhD⁴

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Lack of health behavior and engagement in risk behavior account for a staggering 40% of premature deaths in the United States, and approximately 75% of all current healthcare costs in the United States (\$1.5 trillion) are spent to ameliorate diseases and health problems that are preventable by behavior change. Though the association of health and risk behavior to disease states is clear, the mechanistic linkages between the two are not completely understood. Innovative transdisciplinary research that incorporates multiple levels of analysis, from psychological to physiological to genomic will be necessary to truly understand how it is that changes in behavior *lead to* changes in health and disease states. We present three innovative examples of research that attempts to explore and understand linkages between behavior and biology. Bryan will present data that test associations between cardiovascular fitness, body mass index, and dietary behavior with epigenetic variation in genes that are important for both inflammation broadly and breast cancer specifically. Ferrer will present data from the Midlife in the US (MIDUS) Biomarkers Project to examines emotion regulation (suppression and reappraisal), stress (PSS), sleep, and a suite of inflammatory and metabolic biomarkers. Mongodin will talk about his teams work to characterize the oral microbiota in smokeless tobacco users and cigarette smokers, compared to non-users. Taken together, these investigations highlight interesting and important mechanistic linkages between behaviors such as physical activity, sleep, and smoking and biomarkers of epigenetic change, inflammation, and the microbiome. Discussion will focus on how best to leverage these findings in order to develop better interventions to change health and risk behavior for optimal effects on biomarkers of disease processes.

Symposium 30A

TESTING BEHAVIORAL LINKAGES TO BREAST CANCER RISK VIA DNA METHYLATION: FITNESS, BMI, DIET AND EXERCISE BEHAVIOR CHANGE

Dr. Angela Bryan, PhD

Obesity and breast cancer are high-priority public health issues in the United States today. More than 1 in 3 adults in the US are obese, and about 1 in 8 women will be diagnosed with breast cancer in their lifetime. These two public health issues are strongly interrelated, as obesity puts one at risk for cancer. One important question regards whether increased body weight itself is most important in breast cancer etiology, or whether obesity-associated health behaviors, specifically, diet and exercise, also play an important role. A number of mechanisms have been hypothesized as potential pathways through which obesity, diet, and physical activity may influence breast cancer risk, and one of the most promising is their influence on DNA methylation. In this study, 276 women between the ages of 30 and 45 were recruited to participate in the study as part of a larger randomized controlled trial (RCT) examining the effects of exercise intensity and duration on DNA methylation, particularly of genes related to breast cancer. Body mass index, cardiovascular fitness (VO₂max), and fruit/vegetable consumption were measured at baseline, and then participants engaged in a 16 week supervised exercise intervention that varied in the intensity and duration of exercise bouts. DNA methylation was assessed at baseline and post exercise at CpG sites for a panel of cancer/tumor suppressor genes (BRCA1, RUNX3, GALNT9, and PAX6) and inflammatory genes (TLR4 and TLR6), and pyrosequencing was performed at EpigenDX (Worcester, MA). Methylation of inflammatory genes was strongly negatively related to methylation of cancer genes ($r = -.66$, p_{2max} were significantly associated with methylation of cancer genes. Fruit and vegetable consumption was not associated with methylation of either inflammatory genes or cancer genes. Preliminary analyses of follow-up data suggest that exercise may influence methylation of inflammation genes more strongly than inflammation of cancer genes. Specifically, increases in exercise behavior were associated with changes in TLR4 methylation ($p = .03$) and with an exercise session duration X intensity interaction on changes in TLR6 methylation ($p = .08$). Findings suggest that the obesity and cancer relationship may be impacted by inflammatory pathways that can be influenced by changes in exercise behavior.

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Symposium 30B

DIRECT AND INDIRECT ASSOCIATIONS AMONG EMOTION REGULATION STRATEGIES AND BIOMARKERS OF DISEASE

Dr. Rebecca Ferrer, PhD

Objective: Effectively managing negative emotions is important for physical health, but some strategies for regulating emotions may be healthier than others. We examined the associations between habitually using cognitive reappraisal and emotion suppression as regulation strategies and biomarker indicators of health, and whether perceived stress and sleep quality mediated these relations.

Methods: Participants ($n = 1,255$) in the Biomarkers Project, a subcomponent of the Midlife in the United States (MIDUS) study, completed measures of emotion regulation, perceived stress, and subjective sleep quality. Twenty-four biomarkers were obtained from salivary, urine, and blood samples. Path analyses examined the direct and indirect associations of emotion regulation strategies to biomarkers through perceived stress and subjective sleep quality.

Results: Greater use of suppression was indirectly associated with riskier inflammatory and metabolic biomarkers and greater overall allostatic load. Reappraisal was indirectly associated with healthier biomarker profiles, including overall allostatic load, and inflammatory and metabolic systems specifically. Perceived stress and sleep quality mediated these associations, with suppression being adversely related to each, and reappraisal having beneficial relations to each.

Conclusions: This preliminary evidence suggests emotion regulation strategies may have downstream implications for physical health via stress, sleep, and biomarker expression. Changing which emotion regulation strategies are used habitually may have indirect health benefits by reducing perceptions of stress and improving sleep quality.

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Symposium 30C

INFLUENCE OF BRAND, MENTHOLATION AND STORAGE ON TOBACCO-SPECIFIC BACTERIAL PATHOGENS: IMPLICATIONS SMOKERS' ORAL MICROBIOME

Dr. Emmanuel Mongodin, PhD

Complex bacterial communities that inhabit cigarettes may play a critical role in the generation of carcinogenic tobacco-specific nitrosamines (TSNAs) and in the health effects associated with cigarette smoking. However, the cigarette-associated microbiota, its dynamics, and its effects on the oral health on tobacco users, have been largely left unexplored. We conducted time-series experiments with five commercially-available brands of cigarettes that were either commercially-mentholated, custom-mentholated, user-mentholated or non-mentholated. Cigarettes were incubated for two weeks under three different temperature and relative humidity conditions to mimic pocket, refrigerator or room storage conditions. Metagenomic DNA was extracted, and the V3-V4 region of the 16S rRNA gene sequenced using Illumina MiSeq. Across all brands, bacterial communities were dominated by members of the *Pseudomonas*, *Pantoea*, and *Bacillus* genera, with levels of *Pseudomonas* relatively constant regardless of storage condition. Between-sample comparisons revealed bacterial composition differences by brand, mentholation state, as well as manufacturer's lots. Core bacterial operational taxonomic units (OTUs) were identified in all samples and included *Bacillus pumilus*, *Rhizobium* sp., *Sphingomonas* sp., unknown *Enterobacteriaceae*, *Pantoea* sp., *Pseudomonas* sp., as well as the opportunistic pathogens *Pseudomonas oryzae* and *Pseudomonas putida*. In addition to these experiments aimed at describing the microbiota in tobacco products, human studies were also performed to characterize the oral microbiota in smokeless tobacco users and cigarette smokers, compared to non-users. Our results show significant differences in microbiota composition between these 3 groups. Non-users possess a significantly smaller core of oral bacterial species compared to tobacco-users. Smokeless tobacco users and cigarette-users have a greater core of oral bacterial species. These differences can be partially explained by tobacco-associated bacteria that are transferred from the tobacco to the oral cavity of tobacco users. These data suggest that manufacturing, manipulations (i.e., mentholation) and storage conditions directly impact the cigarette microbiota as well as levels of TSNAs, which may have implications for exposure to both bacterial pathogens and TSNAs among cigarette users.

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Paper Session 9: Improving Physical Activity in the Context of Cancer 3:30 PM-3:45 PM

A PILOT TRIAL OF PERSONAL TRAINING VS GROUP-BASED EXERCISE FOR INCREASING PHYSICAL ACTIVITY IN BREAST CANCER SURVIVORS

Heather J. Leach, PhD¹, Kelley Covington, B.S.², Corrine H. Voss, MS³, Steven Schuster, MD⁴

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Background: Physical activity (PA) improves physical, psychosocial and mortality outcomes in breast cancer survivors. Previous studies have demonstrated the effectiveness of theory based PA interventions for increasing PA in breast cancer survivors. However, to date, the effectiveness of different face-to-face intervention delivery methods has not been assessed.

Purpose: To compare the effectiveness of an 8-week personal training (PT) or group-based exercise (GBE) intervention for increasing PA.

Methods: Breast cancer survivors ($N=27$, M Age= 52.0 ± 8.5) who had completed chemotherapy and/or radiation treatment within the previous year were randomly assigned to PT or GBE for 8-weeks. Participants exercised twice per week for 60 minutes, and received social cognitive theory based PA behavior change education/discussion sessions. Demographic (e.g. age, educational status, etc.) and medical (tumor stage, treatment) information was collected at baseline. PA was assessed at baseline and post-intervention. The International Physical Activity Questionnaire-short measured walking, moderate, vigorous and total PA (MET-hours per week), and a pedometer (Polar A300 Activity Monitor) measured steps per day. Baseline comparisons were performed using independent samples t-tests or chi-square analyses. Repeated measures t-tests examined within group PA changes from pre to post intervention. Analysis of covariance (ANCOVA) was conducted to compare differences in PA at post-intervention, controlling for the baseline value of the specific PA outcomes. Data were analyzed using SPSS version 24.

Results: 24 participants completed the intervention (GBE=12, PT=12). Reasons for drop out were a non-study related injury, and busy schedule/lack of time. Exercise session attendance was $M=15.8 \pm 0.5$ (99%) in PT, and $M=13.4 \pm 1.0$ (82%) in GBE ($p=.000$). At post-intervention, vigorous PA increased in PT ($\Delta 11.8$ MET-hr/week, $t(11)=-3.9$, $p=.002$) and GBE ($\Delta 15.7$ MET-hr/week, $t(11)=-5.2$, $p=.000$). Total PA increased in the GBE group ($\Delta 21.7$ MET-hr/week, $t(11)=-2.4$, $p=.034$). ANCOVA analyses revealed no differences in PA changes between groups.

Conclusion: Despite greater exercise session adherence in PT, GBE was equally as effective for increasing PA in breast cancer survivors, and may be a more cost-effective option. Due to the small sample size, these findings should be interpreted cautiously, and confirmation from a larger, adequately powered trial is needed.

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Paper Session 9: Improving Physical Activity in the Context of Cancer

3:45 PM-4:00 PM

EFFECTS OF REPLACING SEDENTARY TIME WITH PHYSICAL ACTIVITY ON PATIENT REPORTED OUTCOMES IN BREAST CANCER SURVIVORS

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Physical activity can play an important role in alleviating the symptom burden of breast cancer survivors. However, it is unknown the extent to which decreasing time spent sedentary and replacing this time with more active behaviors might affect this symptom burden. Our aim was to determine the effect of substituting time between sedentary and active behaviors on patient reported outcomes in breast cancer survivors. We conducted a pooled analysis of 753 breast cancer survivors ($M_{age}=56.9 \pm 9.5$ yrs, $M_{BMI}=26.4 \pm 5.5$ kg/m²) from two observational studies in which participants wore the ActiGraph hip-worn accelerometer for 7 consecutive days and completed the Functional Assessment of Cancer Treatment-Breast (FACT-B) (physical, social, emotional, and functional well-being) and the Hospital Anxiety and Depression Scale. Isotemporal substitution models, were used to examine the effect of replacing time spent between sedentary and active behaviors on FACT-B, anxiety, and depression outcomes. Analyses controlled for age, body mass index, education, disease stage, treatment, and number of comorbidities. On average, participants engaged in 602.2 ± 74.3 minutes/day of sedentary time, 257.5 ± 69.2 minutes/day of light intensity, 22.7 ± 18.8 minutes/day of moderate intensity, and 1.5 ± 4.2 minutes/day of vigorous intensity physical activity. There was a significant change in physical well-being score when 30 minutes of moderate (mod) or vigorous (vig) activity replaced 30 minutes of sedentary (mod: $B=0.63$, $p=0.01$, vig: $B=2.22$, $p=0.032$) or light (mod: $B=0.57$, $p=0.03$, vig: 2.16 , $p=0.04$) activity. Functional well-being ($B=0.66$, $p=0.028$) and FACT-B total score ($B=2.37$, $p=0.029$) scores also improved when 30 minutes of sedentary time was reallocated to 30 minutes of moderate intensity physical activity. Replacing 30 minutes of sedentary time with 30 minutes of light intensity physical activity resulted in a significant increase in emotional well-being scores ($B=0.12$, $p=0.046$). There were no significant substitution of time effects on social well-being, anxiety, or depression scores. Substituting sedentary time with moderate intensity physical activity showed the greatest range of effect across patient reported outcomes (physical, functional, and FACT-B total score) among breast cancer survivors. These results can inform development of interventions to target specific behaviors for specific outcomes.

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Paper Session 9: Improving Physical Activity in the Context of Cancer

4:00 PM-4:15 PM

BREAST CANCER SURVIVORS' PREFERENCES FOR SOCIAL SUPPORT FEATURES IN A TECHNOLOGY-SUPPORTED PHYSICAL ACTIVITY INTERVENTION

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Despite known benefits, the majority of breast cancer survivors do not meet physical activity (PA) recommendations. Remotely-delivered, technology-supported PA interventions may be particularly useful in offering scalable PA programs for survivors. Incorporating peer and professional social support features into these programs may further increase their effectiveness. Because traditional face-to-face support is not possible in remotely-delivered PA interventions, it is necessary to first understand survivors' preferences for technology-enabled social features prior to intervention development. The purpose of this study was to elucidate breast cancer survivors' preferences for social support features (e.g. teams, discussion boards, exercise buddies) within a remotely-delivered, technology-supported PA intervention. Survivors [$N=96$; $M_{age}=55.8$ ($SD=10.2$)] self-reported demographic and disease characteristics, physical activity, and their interests in and preferences for social features for a remotely-delivered PA intervention via an online questionnaire. A subset of participants ($n=28$) were randomly selected to complete an audio-recorded, semi-structured phone interview. Questionnaire data were analyzed using descriptive statistics. Transcribed interviews were evaluated using a thematic content analysis approach and consensus review. Survey results revealed that the majority of survivors were interested in technology-enabled social features including a behavioral coach (77.1%), an assigned team (66.7%) and an exercise buddy (57.3%). Survivors endorsed sharing their activity data with their team (80.0%) and buddy (76.6%), yet only 44.8% were interested in a progress board. Most survivors (82.3%) were not interested/unsure about linking the intervention to their personal social media accounts. Three main themes emerged from interview data: (1) desire to connect with "survivors like me"; (2) aversion to competitive social features and (3) interest in study staff involvement/support. Preferences for social support features in the context of technology-supported exercise interventions varied among breast cancer survivors, yet data indicate that social features are of interest to survivors. Continued engagement of survivors in developing and implementing remotely-delivered, technology-enabled social features may greater inform future PA interventions.

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Paper Session 9: Improving Physical Activity in the Context of Cancer 4:15 PM-4:30 PM

DO SOCIAL SUPPORT AND NEIGHBORHOOD WALKABILITY INFLUENCE PHYSICAL ACTIVITY DURING PREOPERATIVE PANCREATIC CANCER THERAPY?

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Background: Home-based exercise programs may be prescribed to encourage physical activity among cancer survivors, but the socioecological factors influencing adherence have been incompletely characterized. We sought to examine the effects of social support and neighborhood walkability on physical activity among patients enrolled in a home-based exercise program concurrent with pancreatic cancer therapy.

Methods: Fifty enrolled patients with early stage pancreatic cancer [50% female, median age 67 (range 49–81)] were prescribed ≥ 60 min/week of moderate-intensity aerobic exercise (primarily brisk walking) and ≥ 60 min/week of full body strengthening with resistance tubes while receiving chemotherapy and/or chemoradiation. The abbreviated Neighborhood Environment Walkability Scale (NEWS-A) was administered prior to participation, physical activity was measured using daily logs and Actigraph GT3X+ accelerometers during the program, and the Social Support for Exercise Survey (SSES) was administered prior to and following participation.

Results: Median program duration was 13 weeks (range 5–45). On average, patients reported 126.4 minutes of aerobic exercise ($SD=82.8$) and 39.1 minutes of strengthening exercise ($SD=32.5$) per week and performed 139.0 minutes ($SD=132.7$) of accelerometer-measured moderate-to-vigorous physical activity (MVPA) per week. A positive association was observed between home neighborhood aesthetics and weekly minutes of moderate-to-vigorous physical activity after adjusting for relevant clinicodemographic covariates ($B=.30, p<.05$). Fifty six percent, 80%, and 51% of patients reported no change or increases in SSES subscale scores for family participation, family rewards and punishment, and friend participation, respectively. Patients who reported no change or an increase in family participation reported more weekly strengthening exercise (mean(SD) minutes 50.4(7.2) vs. 27.1(7.4), $Z(38)=-2.4, p=.02$). There were no other significant associations among socioecological factors and physical activity variables.

Conclusion: Social support and neighborhood walkability are important physical activity influences among patients undergoing preoperative treatment for pancreatic cancer. Oncologists, researchers, and exercise professionals should address these influences with patients to mitigate barriers, maximize support, and improve adherence to home-based exercise prescriptions.

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CITATION AWARD WINNER Paper Session 9: Improving Physical Activity in the Context of Cancer 4:30 PM-4:45 PM

SCALING UP A PHYSICAL ACTIVITY INTERVENTION FOR CANCER SURVIVORS: INSIGHTS FROM STAKE-HOLDERS

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Behavioral lifestyle interventions that have empirical support for their efficacy are not often translated into practice. Successful implementation and widespread use may require assessment of the “market” for these interventions, assessment of the feasibility of adopting the intervention by the stakeholders in the market, and the development of a business model to support implementation. *Moving Forward Together* is a telephone-delivered peer-based physical activity intervention that has demonstrated efficacy in increasing physical activity adoption among cancer survivors. Regular physical activity has been recommended for cancer survivors to improve their functioning and well-being.

Method: To learn about how to scale up our intervention, we participated in the National Cancer Institute’s Speeding Research-Tested Interventions training program. We conducted 48 semi-structured interviews with cancer care organizations that had peer mentoring programs ($n=23$), peer mentors ($n=11$), cancer survivors ($n=12$) and other ($n=2$) to identify the stakeholder perspectives in building a viable business model and to identify appropriate customers for the intervention. The interviews were conducted via video/telephone and audio-taped. The notes were transcribed and themes extracted independently by three team members.

Results: Among our key insights, we learned that not all organizations identify physical activity as fitting their mission; however, a majority were interested in offering a program that was not gym-based. A majority endorsed a peer-based physical activity program as a “must have” or “nice-to-have” addition to their current services; all found that peers delivering the program was innovative and would make the program more effective for survivors. Interviews with peer mentors revealed that they were concerned about patient safety, location of programs and the need to individually tailor programs and be supportive of patients. Peer mentors were concerned about the location of their training.

Conclusions: Our qualitative work has demonstrated that there is a “market” for *Moving Forward Together* among cancer care organizations that have peer mentoring programs, and there is interest among peer mentors in extending their assistance to include physical activity promotion. To help scale up our intervention, we identified several features that are important to the cancer care organizations and to peer mentors. Similar research among potential customers can enhance efforts to extend the reach of efficacious behavioral lifestyle interventions.

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Paper Session 10: New Directions in Managing Diabetes and Weight Control 3:30 PM-3:45 PM

CHANGES IN EATING BEHAVIOR AND APPETITE ARE ASSOCIATED WITH WEIGHT COMPENSATION IN THE E-MECHANIC TRIAL

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Physical activity is recommended for weight loss; however, aerobic exercise results in less weight loss than expected for a given exercise-induced energy expenditure. This is referred to as weight compensation. The Examinations of Mechanisms of Exercise-Induced Weight Compensation (E-MECHANIC) study was designed to compare the effect of two doses of aerobic exercise [recommended dose (8 kcal·kg⁻¹·wk⁻¹, 8 KKW) or weight loss dose (20 KKW),] versus to a no-exercise control group on the mechanisms of weight compensation in 198 sedentary, overweight/obese men and women. In this ancillary analysis, we assessed differential responses for energy intake and eating attitudes and behaviors between compensators (those who failed to lose the amount of weight expected from exercise) and non-compensators (those who lost the expected amount of weight), both of which are from the exercise groups only. The primary outcomes were assessed by doubly labeled water (DLW), retrospective appetite-related Visual Analog Scales (VAS), the Compensatory Health Beliefs Scale (CHBS), and the Eating Inventory (EI). The sample was primarily female (72.5%) and Caucasian (66.7%) with a mean (SD) age of 48.9 (11.4) year and BMI of 31.5 (4.7) kg/m². Compensators did not differ from non-compensators on age, weight, BMI or adherence (comp=96.64, non-comp=97.98, all *p*'s>0.45). Non-compensators lost 2.7 kg body weight, while compensators gained 0.8 kg. Compensators had greater increases in energy intake from baseline to week 24 (144.4 vs. 14.3 kcal/d, *p*<0.01), compensatory health beliefs (1.25 vs. -2.14, *p* = 0.01), and hunger (5.1 vs. -2.31, *p* = 0.03) and prospective food consumption (2.34, vs. -3.82, *p*=0.03) from retrospective VAS. Non-compensators had a greater reduction in disinhibition (-1.27 vs -0.28, *p*=0.02). After a controlled exercise intervention, compensators had more difficulty regulating appetite and eating behaviors resulting in increased energy intake, hunger, and prospective food consumption. Non-compensators had greater control of energy intake. These constructs should be targeted in future interventions to facilitate weight loss by preventing compensatory behaviors.

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CITATION AWARD WINNER Paper Session 10: New Directions in Managing Diabetes and Weight Control 3:45 PM-4:00 PM

BASELINE EXECUTIVE FUNCTIONING PREDICTS WEIGHT LOSS AND PHYSICAL ACTIVITY OUTCOMES IN A LIFESTYLE MODIFICATION PROGRAM

Meghan Butryn, Ph.D., Fengqing Zhang, Ph.D., Jocelyn Remmert, B.A., Savannah Roberts, B.S., Evan Forman, Ph.D.

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Emerging evidence indicates that executive functioning may have important and bi-directional relationships with weight control and physical activity. To better understand these relationships and their relevance to populations of interest, longitudinal research with adults seeking weight loss treatment is especially needed. The present study was designed to examine how baseline executive functioning predicted weight and physical activity outcomes after 6 months of behavioral treatment. Participants were overweight or obese adults enrolled in a behavioral weight loss program. At baseline, the Tower Test of the Delis-Kaplan Executive Function System was administered to assess inhibition, self-regulation, and planning. At baseline and 6 months, moderate-to-vigorous physical activity (MVPA) was measured with tri-axial accelerometers and weight was measured by research staff. Participants received 16 sessions of group-based treatment. Rule violations (*p* = .018) significantly predicted MVPA at 6 months, controlling for age, baseline MVPA, baseline BMI, and weight loss, such that participants with the fewest rule violations at baseline had the greatest MVPA at 6 months. Rule violations (*p* = .003) and completion time (*p* = .011) also significantly predicted 6 month weight loss controlling for age, baseline BMI and baseline or 6 month MVPA, such that participants with the fewest rule violations and fastest completion time had the most weight loss at 6 months. These patterns appeared clinically significant: among participants without any rule violations (*n* = 178), 6-month MVPA averaged 169.8 min/week and weight loss averaged 11.0%, while those with rule violations (*n* = 161) averaged 127.2 min/week of MVPA and 8.7% weight loss. Among those in the fastest quartile of completion time (*n*=86), weight loss at 6 months averaged 11.0%, while it was 8.9% for those in the slowest quartile (*n*=86). Total achievement score was not a significant predictor of outcomes (*p* < .05). These data are consistent with the hypothesis that some domains of executive functioning may facilitate or hinder lifestyle modification efforts in powerful ways. Experimental research is warranted that may, for example, determine if training that attempts to improve or compensate for below-average executive functioning might facilitate behavior change.

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CITATION AWARD WINNER
Paper Session 10: New Directions in
Managing Diabetes and Weight
Control 4:00 PM-4:15 PM

HABIT FORMATION IN AN OCCUPATIONAL THERAPY DIABETES SELF-MANAGEMENT INTERVENTION

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Introduction. Habit is a fundamental process by which behaviors are maintained over the long term. Yet, the vast majority of health behavior interventions focus primarily on consciously controlled behaviors and neglect to address habitual health behaviors. To address this gap, we developed and evaluated Resilient, Empowered, Active Living with Diabetes (REAL Diabetes), an occupational therapy diabetes management intervention which emphasizes habit.

Methods. We randomized 81 low-SES young adults with type 1 or type 2 diabetes to receive either the REAL Diabetes intervention or an attention control condition. Participants were 22.6 (± 3.5) years old, 63% female, 78% Hispanic/Latino, 75% with type 1 diabetes, and had baseline A1C levels of 10.8% ($\pm 1.9\%$). The REAL Diabetes intervention was comprised of 10–16 treatment sessions with an occupational therapist over 6 months in their homes or community settings. The intervention focused on developing and maintaining consistent diabetes self-care habits and routines through strategies such as environmental or sequential cues for checking blood glucose or taking medication. The attention control group received standardized diabetes education materials and biweekly phone calls. Blinded assessors collected data at baseline and 6 months; measures included A1C; frequency of diabetes self-care behaviors; habit strength for self-monitoring blood glucose (SMBG habit strength) and taking medications (SRBAI); diabetes distress; and diabetes-related quality of life (DQoL). Data were analyzed on an intention-to-treat basis using all available data in participants' originally assigned groups.

Results. Intervention participants, as compared to control group participants, had statistically significant improvements in A1C ($p=0.01$), DQoL ($p=0.04$); and SMBG habit strength ($p=0.05$). In examining correlations between change scores, participants with greater increases in SMBG habit strength had greater increases in medication adherence ($p=0.01$), and habit strength for taking medications ($p=0.01$), and decreases in diabetes distress ($p=0.04$). Furthermore, participants with greater increases in habit strength for taking medications also reported greater medication adherence ($p=0.005$).

Conclusion. The REAL Diabetes intervention was effective in changing participants' SMBG habit strength. Increases in habit strength for both SMBG and taking medications are associated with improvements in diabetes self-care behaviors and overall well-being.

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Paper Session 10: New Directions in Managing
Diabetes and Weight Control 4:15 PM-4:30 PM

BENEFIT OF SUPPORT FOR DAILY DIABETES MANAGEMENT DEPENDS ON SHARED ILLNESS APPRAISAL IN ADULTS WITH TYPE 1 DIABETES

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Support from one's romantic partner in chronic illness management has been associated with benefits such as better mood and adherence to the illness regimen (Berg et al., 2007). For an illness such as type 1 diabetes, daily support from one's partner may be especially beneficial, as the disease requires the management of multiple tasks (testing, injecting insulin, food management) and individuals face challenges with failures in self-regulation to initiate such tasks. Yet, higher levels of partner support are not always linked with higher adherence. Whether support is beneficial for illness management may depend in part on how individuals appraise their illness (shared with partner versus own illness). To examine these issues 198 couples were recruited where one individual was diagnosed with type 1 diabetes for at least one year (52% females, average age 47 years, average duration of diabetes 27 years; average relationship length 19.4 years). Adults were asked at the end of the day for 14 consecutive days to 1) indicate how they appraised the illness "how you thought about diabetes today" with responses examined as "my issue" versus "shared," 2) rate ways in which their partner was involved (e.g., helped me to figure how to take care of my diabetes), 3) rate how frequently 8 self-regulatory failures occurred (e.g., testing my blood glucose kept slipping my mind), and 4) rate 7 adherence behaviors. Shared illness appraisal occurred on 24% of all days, and overall levels of support were low (2.1 on a 5-point scale). More shared appraisal and greater support across the 14 days were associated with greater reports of relationship quality and emotional and instrumental support from surveys, and shared appraisal as assessed in an interview. Multi-level models indicated that daily support was associated with better adherence for individuals who viewed their illness as more shared, but poorer adherence and more self-regulatory failures for individuals who viewed the illness as their own issue ($p < .05$). The results point to individual differences in the way individuals with type 1 diabetes appraise their diabetes, differences that are important for whether partner involvement in the illness is beneficial or not.

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Paper Session 10: New Directions in Managing Diabetes and Weight Control 4:30 PM-4:45 PM

DIABETES DISTRESS AND GLYCEMIC CONTROL: THE DIRECT AND STRESS BUFFERING EFFECTS OF AUTONOMY SUPPORT FROM INFORMAL SUPPORTERS

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Objective: Adults with poorly controlled diabetes frequently experience diabetes related distress which contributes to worse glycemic control. Social support has been shown to buffer the negative effects of general stress on health outcomes. Autonomy support represents a particularly important form of social support which emphasizes individuals' agency in their disease self-management. Research indicates that autonomy support for diabetes self-management enhances intrinsic motivation, perceived competence, self-care behavior and, glycemic control. However, whether autonomy support from family members and friends can buffer the negative effects of diabetes distress has not been explored. We examined whether autonomy support for diabetes self-management from informal health supporters (i.e., family members and friends) moderated the association between diabetes distress and poorer glycemic control.

Methods: 308 Veterans with type 2 diabetes and one or more risk factors for diabetes complications completed a survey including measures of diabetes distress, and autonomy support from their main health supporter. Hemoglobin A1c (HbA1c) data from 12-months before and after the survey were extracted from participants' electronic medical records. Hierarchical linear regression models were used to examine the main and interaction effects of autonomy support and diabetes distress on repeated measures of HbA1c over the 12 months following the survey (clustered within participants), controlling for prior average 12-month HbA1c, time between the survey and HbA1c measurements, insulin use, age, and race/ethnicity.

Results: In adjusted models, there was a significant direct effect of greater autonomy support with lower HbA1c ($B = -.21$, $SE = .07$, $p = .005$). Autonomy support moderated the relationship between diabetes distress and HbA1c over the 12-months following the survey ($B = -.13$, $SE = .06$, $p = .027$). Specifically, greater diabetes distress was associated with higher HbA1c levels over the following 12 months at low ($B = .21$, $SE = .07$, $p = .002$), but not high ($B = .01$, $SE = .07$, $p = .890$), levels of autonomy support.

Conclusions: Autonomy support from individuals' main health supporters was linked to better glycemic control both directly and by buffering the negative effects of diabetes distress on glycemic control. Adults with high autonomy support from their main health supporters may be protected from the negative effects of diabetes distress on glycemic control.

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Paper Session 11: Promoting Healthy Eating and Activity Among Children through Families and School 3:30 PM-3:45 PM

BARRIERS AND FACILITATORS TO IMPLEMENTATION OF COMPREHENSIVE AND COORDINATED HEALTH EDUCATION IN A LARGE URBAN SCHOOL DISTRICT

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Background: Socioeconomic disparities are abundant among the nearly 400,000 CPS student population, as 87% are from low-income families and nearly 50% are overweight or obese. Chicago Public Schools (CPS) Office of Student Health and Wellness (OSHW) is working to address these disparities through provision of Comprehensive and Coordinated Health Education (CCHE) that is aligned with national standards, supports current efforts in nutrition and sexual health, and includes a connection to health services.

Intervention Description: The CCHE pilot project was implemented over the 2015–16 school year in 25 schools and engaged school administrators and teachers to effectively provide health education to all students grades PreK-12. A Health Education Leader was identified by each pilot school to ensure that the project was aligned with the CCHE Strategic Plan and Scope and Sequence. Schools were charged with providing health education instruction for at least 30 minutes per week centered around nine key health topics: alcohol and other drug-free lifestyle; healthy eating; mental and emotional health/social emotional wellness; personal health and wellness; physical activity; safety and injury prevention; sexual health; tobacco-free lifestyle and violence prevention. In addition, schools were required to collaborate with the CPS OSHW health providers for the provision of school-based health services for their students.

Methods: The CCHE pilot evaluation used a mixed methods approach to garner lessons learned from program implementation and effectiveness of CCHE delivery in pilot schools. The primary data sources for implementation outcomes included: a newly-administered, anonymous survey conducted with CCHE school staff; up to two classroom observations (pre and post) of health education lesson delivery in a subset of schools (N=10) and interviews among the school administrator and health education leader in all 25 pilot schools.

Results: Overall findings from the evaluation illustrated successful implementation of the CCHE project within the 25 schools. Key findings included a two fold increase in the number of schools providing health education instruction for 30+ minutes per week and double the amount of staff using the curriculum resources.

Conclusions: Conclusions will articulate successes and barriers in implementing CCHE throughout a large, urban school district. Lessons learned from partner and teacher training and health service coordination will provide a national model for other schools to implement CCHE.

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Paper Session 11: Promoting Healthy Eating and Activity Among Children through Families and School 3:45 PM-4:00 PM

EFFECTS OF A PHYSICAL ACTIVITY INTEGRATION COURSE FOR CLASSROOM TEACHERS ON STUDENT MOVEMENT AND TEACHER BEHAVIOR

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Teachers are critical champions of physical activity (PA) in school settings (Hills et al., 2015). Findings from teacher training programs that have attempted to improve student school PA levels have been inconclusive (Carson et al., 2014). The purpose of this study was to explore the effects of an online, semester-long (16-week) course, designed to build teachers' capacity to integrate PA in the classroom, on student PA and teacher behavior. Four elementary teachers (100% female) from two public schools in the western United States participated in the study. The two teachers enrolled in the Spring 2017 course (intervention) selected a matched-grade level teacher from their school to participate (control). Kindergarten and first grade students (43 intervention, 42 control; 55.3% female) wore waist accelerometers at school during the last week of the online course (post-only design). On two separate days during the same week, the participating students' PA and teachers' behavior were systematically and reliably observed for two 60-minute class periods using SOSMART (Russ et al., 2017). Multilevel linear regression analyses indicated no significant difference in daily class time spent in accelerometer-derived moderate-to-vigorous PA (MVPA) between intervention ($M = 14.6$ minutes) and control students ($M = 13.2$ minutes, $p = 0.66$). Analyses of 721 SOSMART scans revealed students of intervention teachers were moving 19.5% more often during class than students of control teachers ($p = 0.01$), but control teachers were directing movement (e.g., leading an activity break) as often as intervention teachers ($p = 0.66$). After stratifying by sex, no differences existed in accelerometer-derived MVPA between intervention and control students for both males and females. In sum, teachers taking the online course in classroom PA integration may structure their classroom to support movement in general rather than explicitly direct MVPA opportunities. A 16-week online course format provides a unique and potentially promising approach to training classroom teachers in PA integration. Subsequent research will build upon this study's systematic methodology to determine the impact of the course in diverse school settings with objective control group sampling strategies.

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Paper Session 11: Promoting Healthy Eating and Activity Among Children through Families and School 4:00 PM-4:15 PM

TEACHER-LEVEL FACTORS IMPACT IMPLEMENTATION OF AN ACTIVE LESSON INTERVENTION

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Background: There is consistent evidence that active learning interventions increase children's daily physical activity (PA). Such classroom-based interventions rely on teachers for implementation, yet there is limited research examining factors that facilitate or impede teacher implementation of active lessons. This study investigates how teacher-level factors influence implementation of an active learning intervention, and the resulting intensity of student PA.

Method: Participants were 94 fourth grade teachers (93.5% female, 84.3% non-Hispanic white, $m_{age} = 39$ yrs) and 1,734 fourth grade students (47.4% female, 52.8% non-Hispanic white, 37.9% low SES) from 20 intervention schools of the Texas I-CAN! program. Teachers reported *attitudes* (Cronbach's $\alpha = .91$) and *PBC* ($\alpha = .92$) about implementation of I-CAN! lessons. A latent variable, *school climate*, was assessed with the supportive (e.g. "The principal goes out of his/her way to help teachers"), directive (e.g. "The principal monitors everything teachers do"), and restrictive (e.g. "Administrative paperwork is burdensome") subscales of the OCDQ-RE. For *Quality of Process*: frequency of teacher PA reinforcement ("Good high knees!") and technical instruction ("For push-ups, keep back straight") feedback was observed by staff observers. *Dose of implementation* was assessed through teacher self-report of the total number of lessons conducted over the school year. *Percent time in MVPA* during one active lesson was measured via accelerometry. Average percent time in MVPA was calculated for each class.

Results: A structural equation model examined the interrelatedness of teacher-level factors and impact on teacher implementation and PA. Results indicated relatively good fit (RMSEA = 0.06, SMSR = 0.06, CFI = 0.96). Primary findings include: School climate was positively related to PBC; attitudes and PBC were positively associated with implementation dose; PBC was positively associated with quality of process; while quality of process and dose of implementation were both associated with higher class PA intensity.

Conclusion: Findings indicate that teacher trainings for active learning should focus on enhancing PBC as well as on instructing teachers about the best types of feedback to give during lessons. Future research should investigate the various training strategies (e.g. model a lesson, role play, etc.) to increase PBC and use of PA-related feedback.

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CITATION AND MERITORIOUS AWARD WINNER

Paper Session 11: Promoting Healthy Eating and Activity Among Children through Families and School 4:15 PM-4:30 PM

THE ASSOCIATION OF MATERNAL PERCEIVED STRESS WITH CHANGE IN CHILDREN'S HEALTHY EATING INDEX (HEI-2010) SCORE OVER TIME

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Background: Stress in mothers has been associated with higher body mass index (BMI) in their children. However, findings regarding the relationship between maternal stress and the quality of their children's dietary intake are mixed. Previous studies have been limited by a narrow focus on specific child dietary components (e.g., sugar sweetened beverages), use of maternal-only reports of children's dietary intake, and measurement of maternal stress and child diet at a single time point, preventing temporal analysis. This study examined the changes in child-reported diet quality over time, as well as the association between maternal stress at baseline and changes in overall dietary quality across time.

Methods: Mother-child dyads (n=174) participating in the Mothers' and their Children's Health Study completed three assessment waves separated by six-month intervals. At each wave, mothers (mean age at baseline=41.0 years, SD=6.1) completed the 10-item Cohen's Perceived Stress Scale (PSS). In the week following survey completion, children (52% female, mean age at baseline=9.6 years, SD=0.9) completed up to two telephone-based 24-hour dietary recalls, which were used to calculate each child's wave-specific Healthy Eating Index 2010 (HEI-2010) score. The HEI-2010 is a summary score of overall diet quality, ranging from 0–100, with higher scores indicating healthier diet. To account for the clustering of observations within dyads, multilevel models were used, and baseline PSS scores were centered to represent each mother's deviation from the group mean. In Model 1, wave was used to predict the change in child HEI-2010 across waves. In Model 2, a cross-level interaction term of baseline PSS and wave was created to test the effect of maternal stress over time on child HEI-2010, controlling for child sex.

Results: Model 1 revealed that, overall, there were no changes in child HEI-2010 over time (B= - 0.3906, p= 0.5021). However, controlling for child sex, there was a significant cross-level interaction effect of mother's baseline PSS with wave (B= -0.2194, p< 0.05), indicating that children of mothers who reported greater baseline stress experienced steeper decreases in diet quality over time, relative to children of mothers with average level of baseline stress.

Conclusions: Our analysis reveals that elevated maternal stress is associated with longitudinal decreases in the quality of their child's diet. Future research on child obesity should consider the potential benefits of maternal stress reduction in promoting children's healthy weight-related behaviors.

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CITATION AND MERITORIOUS AWARD WINNER

Paper Session 11: Promoting Healthy Eating and Activity Among Children through Families and School 4:30 PM-4:45 PM

MONITORING AND MODELING FAMILY EATING DYNAMICS (M2FED): A SENSOR SYSTEM TO DETECT DIETARY MIMICRY IN FAMILIES

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BACKGROUND: Evidence shows that family relationships and systems influence eating behavior and ultimately health risks (e.g., obesity). Child and adolescent eating habits and preferences are predominantly learned in family settings, although influence processes may be bidirectional. A key mechanism of interpersonal influence on eating behavior may be unconscious behavioral mimicry: when two or more people engage in the same behavior at the same time. There is evidence of dietary mimicry in strangers and mother-daughter pairs, but research has not yet explored dietary mimicry in entire families. This study examined whether family members mimicked the bites of each other in real time.

METHODS: M2FED is a cyber-physical system being developed to detect family eating behavior and other proximal determinants in the home environment with wearable and in-home sensors. To develop accurate algorithms for detecting eating via a smart watch, 22 participants from 7 families (7 parents: M age = 40 yrs; and 15 children: M age = 15 yrs) wore a smart watch on their dominant wrist and were videotaped while eating an unstructured meal with their family. Each videotape was coded for bite occurrence and bite time. These analyses test for associations in the number of bites and bite frequency among pairs of family members (n = 24 dyads, n = 1361 bites).

RESULTS: Significant differences in total bites and eating rates (bites per minute) were not found between parents and children. However, younger children had a faster average eating rate than older children (2.4 vs 1.9 bpm), and males took more total bites than females (78.6 vs 55.2). There was a significant positive correlation in total bites between dyad members ($r = 0.65$, $p < 0.001$) and a trend towards a significant positive correlation in eating rates ($r = 0.33$, $p = 0.10$). The extent to which dyads were similar in their total bites and eating rates did not differ between child-child dyads and child-parent dyads ($t = 0.60$, $p > 0.05$).

CONCLUSION: This pilot study provides preliminary evidence that the eating behaviors among pairs of family members are positively associated when they are co-engaged in an unstructured meal. These analyses will inform systems modeling of family eating dynamics over time (i.e., weeks, months) to identify temporal patterns of eating mimicry and broader synchrony of eating behaviors and other proximal determinants (mood, social interaction) using rich and contextualized data collected via our M2FED sensor system from multiple families in their homes.

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Paper Session 12: Peer and Family Support in the Context of Cancer 3:30 PM-3:45 PM

“I FEEL GUILTY FOR NOT HELPING HER ENOUGH”: PSYCHOSOCIAL CORRELATES OF GUILT AMONG SPOUSES OF CHINESE WOMEN WITH BREAST CANCER

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Background. Husbands of breast cancer survivors generally report challenges in multiple life domains when providing care to their spouses. Qualitative studies have suggested that guilt (i.e., perception of inadequacy in providing care to the recipient) is commonly experienced among husband caregivers of breast cancer survivors. However, little is known about the psychosocial correlates of caregiver guilt in the Chinese context.

Methods. This study recruited 176 Chinese husbands of women with breast cancer, recruited from two hospitals in Weifang, China. Participants' guilt, caregiving-related stressors, coping resources and strategies, and individual differences (e.g., endorsement of the “Masculinity strength” gender role norm (sample item: “A man should protect his loved ones”)) were measured in a questionnaire package.

Results. Hierarchical regression results showed that younger age ($\beta = -0.18$), lower endorsement of “Masculinity strength” gender role norm ($\beta = -0.42$), less protective buffering ($\beta = -0.18$), higher caregiving burden ($\beta = 0.31$), and higher social support seeking from spouse ($\beta = 0.16$) were associated with higher caregiving guilt (all $ps < .05$). Additionally, the “Masculinity Strength” gender role norm moderated the relationship between social support seeking from spouse and guilt ($\beta = 0.14, p = .03$), such that social support seeking from spouse was only associated with higher caregiver guilt for those having a stronger endorsement of such a norm (+1 SD) ($\beta = 0.29, p < .001$), but not among those with lower endorsement of the norm (-1 SD) ($\beta = -0.02, p = .89$). Marital satisfaction also moderated between protective buffering and guilt ($\beta = -0.15, p = .02$), such that lower protective buffering was associated with higher guilt only among those perceiving higher marital satisfaction (+1 SD) ($\beta = -0.36, p < .001$), but not those perceiving lower marital satisfaction (-1 SD) ($\beta = -0.06, p = .51$).

Conclusions. This study provided important information about the psychosocial correlates of caregiver guilt among husbands of Chinese breast cancer patients. Our findings seemed to support that interventions helping caregivers to reduce caregiving burden may decrease their guilt. The impacts of social support seeking and protective buffering on guilt may also differ according to caregivers' endorsement of gender role norms, marital satisfaction, and the broader cultural contexts. These findings could help researchers to design evidence-based interventions to serve specific needs of those husband caregivers, which may in turn facilitate well-being in both the caregivers and the patients living with breast cancer.

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Paper Session 12: Peer and Family Support in the Context of Cancer 3:45 PM-4:00 PM

IT TAKES TWO TO MAKE A THING GO RIGHT: IMPACT OF HUSBANDS' PERCEPTIONS OF WIVES' SELF-EFFICACY FOR COPING WITH CANCER

Thomas V. Merluzzi, PhD

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Introduction: Spousal support is a crucial to positive adaptation to cancer and unsupportive behaviors can impair adjustment. In social learning theory, support can be traditional social support, but also persuasion, modeling, or shared perspectives of challenges. This study was a test of the shared perspective hypothesis.

Method: 72 women in treatment for breast cancer and their husbands completed measures of self-efficacy for coping (SEC) and quality of life (QOL). Performance status was obtained from medical records. Husbands completed the self-efficacy for coping (HSEC) measure based on their perceptions of their wives' coping efficacy. Correlations, regression, and mediation analyses were conducted to determine the contributions of husbands' (HSEC) and wives' perspectives (WSEC) to the wives' QOL.

Results: Interestingly, the correlation between WSEC and HSEC was .207. However, in regression analyses both WSEC ($B = .393, p = .001$) and HSEC ($B = .243, p = .026$) contributed significantly to the wives' QOL. Models were tested to determine the nature of the relationship between WSEC and HSEC: discrepancy model = WSEC-HSEC; aggregate model = WSEC+HSEC; multiplicative model = WSEC X HSEC. The discrepancy model was not related to wives' QOL, however the aggregate ($B = .494, p < .001$) and multiplicative ($B = .408, p < .001$) models equally and significantly predicted wives' QOL. In a double mediation model, both HSEC and WSEC fully mediated ($B = -.371, p = .032$) the relationship between performance status and QOL.

Discussion: Though based on a similar construct, husbands' perception of their wives' efficacy made a distinct contribution to their wives' QOL, and both WSEC and HSEC mitigated the negative effects of disease impact on QOL. Thus, it is the aggregate of the two distinct perceptions of efficacy expectations that is critical in determining QOL. Future research will be needed to determine the quality of the differences between HSEC and WSEC in order to develop interventions to optimize the impact of these two perspectives on coping.

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Paper Session 12: Peer and Family Support in the Context of Cancer 4:00 PM–4:15 PM

PEER SUPPORT OPPORTUNITIES ACROSS THE CANCER CARE CONTINUUM: A SYSTEMATIC SCOPING REVIEW OF RECENT PEER-REVIEWED LITERATURE

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Cancer is the second leading cause of death in the United States. Evidence supports peer support (PS) as an effective strategy for enhancing prevention and control of cancer. However, there is a need to understand the opportunities that exist in the use of PS in cancer to inform future interventions and programming. Thus, this systematic scoping review examines the range and variety of interventions reported in recent peer-reviewed literature on the use of PS across the cancer care continuum. Our population of interest included adult populations or families of adults affected by cancer. Our search was conducted in PubMed, SCOPUS, and CINAHL to identify relevant peer-reviewed literature published from 2011–2016. To survey the breadth of literature in this area we used a broad definition of PS and 44 search terms including variations of “promotora,” “community health worker,” and “peer educator.” We screened the title and abstracts of 2087 articles, followed by full-text screening of 420 articles, resulting in a final sample of 242 articles of which the most recent 100 articles were reviewed. Many of the cancers addressed by the PS interventions were breast (54% of all papers, percentages not summing to 100% because of overlap), gynecological (31%) and colorectal cancer (29%). In contrast, few papers focused on other cancers (e.g., only 5% on lung cancer). This suggests the need to better disseminate PS methods and practices to address more cancer types. Moreover, 50% of interventions focused solely on women, whereas 7% focused solely on men. Other areas needing more attention include the provision of PS at late stages in cancer care (4% palliative or end-of-life care). Many interventions (40%) targeted multiple outcomes, with the most common being patient engagement (75%) and psychosocial health (48%); less common were behavioral risks (10%) and cancer progression (3%). Many interventions sought to address racial or ethnic disparities in cancer outcomes (62%), but few studies focused on geographic disparities (8%). Despite the important, yet challenging work of peer supporters, few studies (4%) examined the positive or negative impacts on those providing PS. Attention to the wellbeing of peer supporters is critical for program quality and the sustainability of this often volunteer-based workforce. Our review highlights PS as a promising approach to addressing needs across the cancer care continuum. While well developed in many areas, there are important opportunities to expand the use of PS to all cancers, in palliative and end-of-life care, where geographic disparities exist, and to address the effects on those providing support.

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Paper Session 12: Peer and Family Support in the Context of Cancer 4:15 PM–4:30 PM

MEASURING THE DEGREE OF CLOSENESS TO THE CANCER EXPERIENCE: REVISITING THE CONNECTION TO THE EXPERIENCE OF CANCER SCALE -CONNECS

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The experience of cancer in one's family can have a significant impact on a person's perceived risk of developing cancer, which may then affect their medical decisions and engagement in health behaviors. However, there are few scales to assess one's lived experience with and proximity to cancer. A scale to measure the degree of closeness to a cancer experience, CONNECS, was previously developed and initially validated. Although results indicated a well-fitting three-factor model, several limitations were noted. We sought to address these limitations by modifying the response set and adding items to better discriminate between high and low levels of closeness to the cancer experience. The 11-item CONNECS was administered to participants in the Sister Study, a prospective cohort study of women with at least one sister diagnosed with breast cancer (n=19,540), as part of a CDC-sponsored survey. The sample was randomly split into two sub-samples. An exploratory factor analysis (EFA) with varimax rotation was conducted on subsample 1 (n1=9770) and a confirmatory factor analysis (CFA) was conducted on subsample 2 (n2=9770). Scale reliability was assessed using Cronbach's alpha for the overall scale as well as for each subscale. Results of the EFA indicated a four-factor model with items clustering into: 1) general closeness, 2) resemblance, 3) cognitive processing, and 4) caregiving. Results of the CFA confirmed a good fit of the four-factor model (RMSEA= 0.060; CFI= 0.967; TLI= 0.944; SRMR= 0.031; X²= 1129.24, p<0.001). Reliability analysis of the overall scale indicated good internal consistency (alpha= 0.807). Reliability analysis of each subscale indicated that general closeness, cognitive processing, and caregiving subscales had moderate to good internal consistency (0.805, 0.706, and 0.850, respectively), and the resemblance subscale having poor internal consistency (0.540). Findings provide additional evidence for the reliability and construct validity of CONNECS in measuring an individuals' lived experience with cancer. Factors associated with general closeness, and cognitive processing (talking about and time spent thinking about cancer) were consistent with our previous findings. However, additional item development and testing is likely needed for the resemblance subscale. The revised CONNECS may be a useful tool for understanding the impact of the cancer experience on risk perception, cancer worry, and decision-making.

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CITATION AWARD WINNER
Paper Session 12: Peer and Family Support
in the Context of Cancer 4:30 PM-4:45 PM

STORIES OF SURVIVAL: FAITH, FAMILY AND GENETIC COUNSELING IN AFRICAN AMERICAN WOMEN WITH A FAMILY HISTORY OF BREAST CANCER

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Background: Breast cancer (BC) mortality is higher for African-American women (AAW) than for any other race or ethnicity. Increasing uptake of genetic counseling among AAW with increased BC risk is a key step in reducing racial disparities in BC. We are developing a culturally-sensitive intervention that provides educational information designed to motivate AAW with genetic risk for BC to engage in genetic counseling. To identify themes that are culturally relevant and salient to the target population, multiple qualitative methods were used to identify barriers, motivating factors, and familial experiences related to BC that impact the desire and ability of AAW to access genetic counseling.

Methods: Women at high risk for BC, previously recommended for genetic counseling, were recruited at a Federally Qualified Health Center in Chicago to participate in semi-structured, one-on-one interviews and in story circles. Interviews focused on barriers, motivating factors, and knowledge related to genetic counseling. Story circles focused on familial experiences related to cancer. Thematic analysis of both methods was conducted using primary and secondary coding with Atlas software and detailed field notes.

Results: Interviews (n=20) were followed by story circle sessions with a subset of participants (n=11). Women expressed barriers related to psychosocial concerns and healthcare system navigation. They also discussed challenges associated with familial secrecy due to shame or guilt; fatalistic spiritual and cancer beliefs; high medical costs, discrimination, fragmented care in the healthcare system; and limited cancer-related knowledge. Women expressed a desire for more education related to cancer; a desire to disrupt generational patterns of secrecy; and to hear testimonials of “like” others who have undergone genetic counseling. Data will be presented comparing findings from interviews and story circles to define the contributions of each methodology.

Conclusion: Use of multiple qualitative methods represents an innovative, culturally sensitive approach that provides comprehensive exploration of factors associated with uptake of genetic counseling in high risk populations. Data will inform the creation of an educational intervention by incorporating the “lived experiences” of AA families with BC.

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CITATION AWARD WINNER
Paper Session 13: Progress in Smoking
Cessation Interventions 3:30 PM-3:45 PM

LONG-TERM RESULTS OF PEDIATRIC TRIAL TO REDUCE CHILD SECONDHAND SMOKE EXPOSURE AND PROMOTE SMOKING CESSATION

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Secondhand smoke exposure (SHSe) harms children’s health, yet effective interventions to reduce child SHSe have been difficult to implement in pediatric practice. We addressed this problem using a multilevel intervention combining pediatrician advice with telebased behavioral counseling. The intervention, Kids Safe & Smokefree (KiSS), was tested in a randomized controlled trial (N = 327) with two-groups and three measurement periods: pre-intervention, end-of-treatment (EOT) and 12-month follow-up. Smoking parents of children < 11-years-old were recruited from urban pediatric clinics. All parents received clinic-level intervention from pediatricians. Messages were embedded in electronic health record systems to prompt pediatricians during clinic visit to “Ask” about child SHSe, “Advise” about SHSe harms, and “Refer” smokers to cessation resources (AAR). After AAR, consented parents were randomized to a 3-month tele-based intervention condition that used support, education and cognitive-behavioral skill building to promote reduction in child SHSe and parent smoking cessation (COUNSELING) or an attention control nutrition education condition (CONTROL). Healthcare providers and assessors were blind to group assignment. Primary outcomes at EOT were parents’ self-reports of child SHSe and their own smoking status. Analyses of parent reported outcomes at EOT (in press) suggest that counseling reduced children’s exposure and increased quit rates significantly relative to the control condition. The present paper examines heretofore unreported findings using more objective bioverified data collected at 12-month follow-up, including child SHSe verified using urinary cotinine levels and parent 7-day point prevalence abstinence from smoking verified using salivary cotinine levels. Participants were predominantly unmarried (59%), African American (84%), female (84%), and living below poverty (79%). Intention-to-treat analyses showed a significant effect of intervention on 12-month quit rates: the counseling group was 2.46 times more likely to have quit than controls (p<.05). Average child cotinine levels dropped significantly in both groups from baseline to 12-month follow-up (p<.001), but there were no differences between groups. These findings suggest that a multilevel-pediatric intervention effectively reaches high-risk children, pediatrician advice may improve parent protections of children from SHSe, and relatively intense intervention is necessary to help parents to quit smoking.

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Paper Session 13: Progress in Smoking Cessation Interventions 3:45 PM–4:00 PM

PEER MENTORING AND AUTOMATED TEXT MESSAGES FOR SMOKING CESSATION: A RANDOMIZED PILOT TRIAL

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Background: Peer mentoring delivered by lay coaches who provide emotional and informational support is an essential component of popular health promotion programs like Alcoholics Anonymous and Weight Watchers. For smokers who want to quit, automated text messaging programs also provide encouragement and information for quitting and have proven helpful. However, existing interventions for smoking cessation have not tested a combination of these effective approaches.

Methods: In February and March 2017, 200 smokers who were planning to quit were recruited online and randomly assigned to receive smoking cessation support for 6–8 weeks via (i) automated text messages similar to NCI's SmokefreeTXT program (control group) (n=99), or (ii) automated text messages plus personalized texts sent from trained mentors who were former smokers (n=101).

Results: After three months, 7-day point prevalence abstinence was 40% in the mentored group (22/55) versus 21.4% (12/56) in the control group ($p=0.03$). Results based on an intent-to-treat (ITT) analysis were similar (22% versus 12%, $p=.07$). Controlling for socio-demographic and smoking-related variables, the average treatment effect was 19% (ITT: 13.9%, $p=0.05$). Moreover, 78% of the mentored group felt someone cared if they quit versus 51% in the control ($p=0.01$). Biochemical validation at follow-up to be reported.

Implications: Text-based peer mentoring from former smokers holds potential as an acceptable, effective, and engaging smoking cessation intervention.

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Paper Session 13: Progress in Smoking Cessation Interventions 4:00 PM–4:15 PM

COMPUTER-FACILITATED 5A'S FOR TOBACCO USE DISORDERS: USING TECHNOLOGY TO IMPROVE SCREENING AND BRIEF INTERVENTIONS

Jason Satterfield, PhD

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Background: Clinical practice guidelines recommend that primary care providers (PCPs) deliver the 5A's (*ask, advise, assess, assist, and arrange*) at every clinical encounter for the treatment of tobacco use disorders. Unfortunately, while most clinicians "ask" and "advise," adherence to the "assist" and "arrange" steps remains low due to time, confidence, and skill limitations. Innovative service delivery models are needed to improve 5A's adherence and coordinated tobacco cessation efforts.

Objective: To evaluate effectiveness of a computer-facilitated 5A's (CF-5A's) intervention to improve PCP 5A's adherence. Primary outcomes include adherence to each "A" and to the 5A's as a whole.

Materials and Methods: PCPs from 3 clinics (HIV primary care, safety net, and academic health center) were randomized into the CF-5A's intervention or to usual care (UC). Adult patients who had smoked at least 100 lifetime cigarettes and at least one cigarette in the past 7 days were recruited in primary care waiting rooms and assigned to their provider's condition. Intervention patients completed the CF5A's and two tailored clinical summaries were generated – one for the provider and one for the patient. UC patients completed an eligibility survey and consent only. Within 72 hours of the appointment, patients completed a post-visit interview about their receipt of the 5A's during their PCP encounter. Patients could participate up to three times within the yearlong study period.

Results: N=221 providers saw n=961 patients (n=412 intervention; n=549 UC) in n=1,340 total encounters with n=1,011 completed post surveys (75.4% response). After accounting for 4-level nesting effects, GEE models showed intervention PCPs 32% more likely to "Assess" (OR 1.32; 95% CI, 1.01–1.72), 45% more likely to "Assist" (OR 1.45; 95% CI, 1.08–1.93), and 72% more likely to "Arrange" in the first visit only (OR 1.72; 95% CI, 1.23–2.40), and 104% more likely to complete all 5A's during the first visit (OR 2.04; 95% CI, 1.35–3.07).

Conclusion: A computer-facilitated 5A's delivery model was effective in improving the fidelity of provider-delivered 5A's to diverse PC patients. This relatively low cost, time-saving intervention has great potential for smoking cessation and other health behaviors. Future studies should identify ways to promote and sustain technology implementation including seamless integration with electronic health records and other digital tools.

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Paper Session 13: Progress in Smoking Cessation Interventions

4:15 PM-4:30 PM

ORAL HEALTH 4 LIFE: A RANDOMIZED SEMI-PRAGMATIC TRIAL CONDUCTED WITH STATE TOBACCO QUITLINES

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Smokers are at increased risk for oral disease, and those seeking treatment through state-funded tobacco quitlines are at particularly high risk since many lack dental insurance and access to affordable dental care. Interventions are needed that can promote dental care utilization and smoking cessation in this high-risk population. Thus, we developed a novel program (Oral Health 4 Life, OH4L) that integrated oral health promotion content into the standard multi-call quitline program. The program referred smokers to local, low-cost dental providers and encouraged positive oral health behaviors (flossing, chewing xylitol gum, etc.) as strategies for managing cravings to smoke. Using a semi-pragmatic design to balance experimental control and generalizability, we recruited callers (n = 718) from the LA, NE, and OR quitlines. Participants were randomized to standard care (SC) or SC + OH4L and followed for 6 months to assess use of professional dental care and smoking cessation. Participants were racially diverse (42% non-white), low-SES, 71% reported fair/poor oral health, and all were overdue for routine dental care. At 6-month follow-up, use of professional dental care and smoking abstinence were not significantly different in the primary analysis with missing outcome values imputed as no dental care/current smoker. 18% in each arm sought dental care (OR 1.03 [0.69–1.53], P=0.94). Smoking cessation rates were 30.3% in SC vs. 33.8% in SC+OH4L (OR 1.29 [0.93–1.78], P=0.13). In a complete case sensitivity analysis dental care outcomes were unchanged, but cessation rates were significantly higher in the SC+OH4L arm at 2 months (39.1% control vs. 46.4% OH4L, OR 1.42 [1.01–2.00], P=0.04) and approached significance at 6 months (40.8% control vs. 46.9% OH4L, OR 1.37 [0.95–1.96], P=0.09). Fidelity to the intervention protocol was very good and there was no evidence of treatment contamination. The strong design provides confidence that OH4L did not increase use of professional dental care or smoking cessation compared to standard care, but the findings suggest oral health counseling may offer some advantage to smokers when quitting. The study is important because it: 1) demonstrates behavioral interventions can be integrated with standard quitline care without negatively impacting cessation, 2) is a model for conducting semi-pragmatic randomized trials, and 3) is a model for partnering with quitlines to address high-risk behaviors other than smoking.

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Paper Session 13: Progress in Smoking Cessation Interventions

4:30 PM-4:45 PM

A MULTIDISCIPLINARY, MULTILAYERED PROGRAM FOR VETERANS AND SMOKING CESSATION: VETS KICK BUTTS

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Tobacco use among Veterans is a primary cause of disease, disability, and compromised quality of life. While many VA Medical Centers possess a Health Behavior Coordinator (HBC) responsible for tobacco programming across a Facility, there may often be times in which the HBC is unavailable due to leave, serving a detail, or the position being vacant. During these times, few if any cessation interventions are offered despite the immense need, particularly in our VA that serves well over 100,000 Veterans as the most medically complex in the nation. Furthermore, Veterans tend to report better engagement and outcomes when cessation programs include many disciplines that can share their expertise, and connect ongoing care from a Patient Aligned Care Team in Primary Care to the tobacco cessation program. Our team also decided to create a visible, memorable logo and name for our program that Veterans could connect with: Vets Kick Butts. This paper will outline the many advantages of our Multidisciplinary Program that is highly sustainable due to the multitude of staff who oversee and conduct psychoeducational classes (Psychologist, Psychology trainees, Social Workers, Registered Nurses) as well as optional Nicotine Replacement sessions (Physicians, Pharmacists, Physician Assistants) following each class. Our implementation strategy, process, and navigation of barriers experienced over the past four years will also be outlined. The aim of our current project was to create a sustainable, comprehensive smoking cessation program complete with educational materials to best serve the needs of our veterans. Borrowing heavily from evidence-based programs already existing in VHA, our team also created a 70 page workbook complete with guidance on nicotine replacement and e-cigarettes consistent with VHA policy. This paper will present our model and reflections from implementation across the past four years both in our main Facility and nine community clinics. Outcome data from our program indicate that cessation rates are comparable to similar cessation programs and nicotine replacement (30–40%) but also highlight the need for ongoing care and structure beyond our 5 session protocol. The support group that was borne out of this need will also be outlined, as well as methods that address enduring challenges to our program: how best to orient and train staff, ways of integrating technology into content delivery/aftercare, and how best to engage Veterans into treatment from within Primary Care and from Mental Health. Presentation will conclude with an overview of how Motivational Interviewing is disseminated among various staff in Primary Care from the presenter, including how MI and health coaching have become our primary means of delivery in the Vets Kick Butts program.

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Paper Session 14: Advances in Medical Decision Making 3:30 PM-3:45 PM

VALUES CLARIFICATION EXERCISES IMPROVED PARENTAL DECISION MAKING ABOUT NEWBORN GENOMIC SEQUENCING

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Purpose: Genomic sequencing may be used in the future as a component of newborn screening, introducing complex issues surrounding parental consent and decision support. Using an online decision aid we developed to help parents make informed decisions about genomic sequencing for their newborn, we tested our prediction that adding a values clarification exercise to educational content would improve decision making outcomes.

Methods: As part of an online randomized experiment, women and men ages 18–44 who were either currently pregnant, had a partner who was pregnant, or were preparing to get pregnant in the next two years were randomly assigned to view either decision aid content that included only educational information about genomic sequencing for newborns or content that included both educational information and a values clarification exercise about sequencing. Analyses were conducted using ANCOVA, including sex, health literacy, and experience with genetic testing as covariates. Moderation analyses were conducted using Hayes' PROCESS macro.

Results: Of the 1,000 participants who completed the decision aid, those who completed the values clarification exercise experienced less decision regret ($M = 1.95$, $SD = 0.72$) than those who viewed only educational content ($M = 2.05$, $SD = 0.73$), $F(1, 995) = 5.09$, $p = .020$. Participants who completed the values clarification exercise were also clearer about their personal values (a subscale of the decisional conflict scale) ($M = 4.00$, $SD = 0.85$) than those who did not ($M = 3.87$, $SD = 0.83$), $F(1, 995) = 6.39$, $p = .010$. Moderation analyses revealed that the benefit of the values clarification exercise on decision regret was particularly evident among participants with lower health literacy ($\beta = -.21$, $SE = .06$, $t = -3.49$, $p < .001$) and no prior genetic testing experience ($\beta = -.11$, $SE = .05$, $t = -2.05$, $p = .040$). Additionally, the effect of the values clarification exercise on decisional conflict was only significant among those with lower health literacy, $\beta = -0.17$, $SE = 0.06$, $t = -2.72$, $p < .01$.

Conclusion: Adding values clarification to educational content in decisional aids for expectant and future parents deciding whether to have genomic sequencing for their child may produce a better decision making experience. Completing a values clarification exercise in addition to educational content appears to provide the greatest benefit to individuals with lower health literacy and no prior genetic testing experience.

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Paper Session 14: Advances in Medical Decision Making 3:45 PM-4:00 PM

DECISIONAL CONFLICT ABOUT TREATMENT IS PERSISTENT IN MEN WITH LOW-GRADE PROSTATE CANCER AND THEIR CLOSE ALLIES AFTER DIAGNOSIS

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Purpose: Men diagnosed with low-grade prostate cancer and their close allies report significant uncertainty making the decision between pursuing treatment or active surveillance. This study explored if decisional conflict (DC) between patients and partners was related and resolved over time.

Methods: Men recently diagnosed with low-grade prostate cancer eligible for active surveillance (N=150) and their close allies (N=70, 83% spouses; dyads N=64) completed the Decisional Conflict Scale at baseline and again three months later. Total and subscale scores (Information, Value Clarity, Support, and Uncertainty) were examined, with higher scores indicating greater conflict. Correlations and paired-samples t-tests compared scores of patients and allies at each time point. Stability-influence modeling using actor-partner interdependence modeling (SI-APIM) examined the stability of patients' scores controlling for the influence of their allies' scores from baseline to follow-up (and vice versa: stability of allies' scores controlling for patients' scores).

Results: For patients, total DC and all subscale scores declined from baseline to follow-up ($ps < .001$). For allies, total DC and all subscale scores declined from baseline to follow-up ($ps < .02$), except for decisional support ($p = .14$). At baseline, total DC and uncertainty scores were positively related between patients and their allies ($ps < .02$), and patients reported receiving more decisional support than allies ($p = .01$). At follow-up, there were no associations or differences between patients' and their allies' DC scores. SI-APIM revealed that, for total DC and all subscale scores, one's own higher score at baseline was related to higher scores at follow-up (stability effect; $ps < .001$); however, there were no effects of one's partner's baseline score on follow-up scores (influence effect; $ps > .10$).

Conclusions: DC declines across the early post-diagnosis period among both men and their close allies. Those experiencing the highest DC, however, show slower reductions in conflict, regardless of their partner's conflict. Findings suggest clinical attention to reduce DC is warranted for men with low-grade prostate cancer with high DC at diagnosis, along with their allies.

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Paper Session 14: Advances in Medical Decision Making 4:00 PM–4:15 PM

SHARED DECISION-MAKING AND SOURCES OF INFORMATION AMONG PERSONS WITH RARE DISEASES: AN ONLINE SURVEY WITH A U.S. SAMPLE

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Most people with rare diseases (defined as prevalence <200,000 Americans) report receiving insufficient information and support through the healthcare system and report turning to rare disease organizations for these needs. Shared decision-making is central to patient-centered care and improves with access to and understanding of health information, but it has not yet been studied in rare diseases. The objective of this presentation is to examine the relationship of shared decision making with sources and trust of health information among persons with rare diseases.

Methods. We conducted a cross-sectional online survey of adults living in the U.S. diagnosed with a rare disease. The National Organization of Rare Disorders and Coordination of Rare Diseases shared recruitment materials. A total of 1473 participants representing 232 different rare diseases completed the survey between December 2016 and May 2017 and 1185 were retained in this analysis. Shared decision making was assessed with a standardized 9-item scale with a range from 0 - 100. Sources and trust of information items were adapted from the Health Information National Trends Survey. Multivariate analyses regressed shared decision making on sociodemographics, disease characteristics, and use and trust of information from rare disease organizations, support groups, and physicians, and health literacy measures.

Results: The sample was comprised of 77% female, 55% married, 60% college degree, 94% White and mean age 51. Participants searched for information through multiple sources –rare disease website (70%), rare disease organization (personal contact made) (46%), doctor (66%), support groups (46%) and complementary and alternative medicine (16%). Over 70% trusted information from rare disease organization websites as compared to trusting information from physicians (57%), support group (40%), complementary and alternative medicine (2%). Higher shared decision-making was related to higher use, satisfaction and trust of information from rare disease websites, support groups, and doctors as well as ease in finding and understanding information. In multivariate linear regression models, higher shared decision-making was related to contacting a rare disease organization and turning to and trusting a physician for information after controlling for socio-demographics and rare disease characteristics. Health literacy variables were insignificant in the model, but persons who reported more frustration searching for information reported less shared decision-making.

Conclusions: Both the physician and the specific rare disease organization are central points for information for persons with rare disease. Our group is planning future work to expand types and availability of information from rare disease organization to better prepare client and physician for the shared decision making process.

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Paper Session 14: Advances in Medical Decision Making 4:15 PM–4:30 PM

REPRODUCTIVE DECISION MAKING AMONG POSTPARTUM HIV-INFECTED WOMEN IN RURAL SOUTH AFRICA

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Objectives: Despite pregnancy spacing recommendations, women in sub-Saharan Africa often become pregnant within 12 months postpartum. Planned pregnancy among women living with HIV (WLHIV) is essential to optimize health outcomes among mothers and neonates. This study examined reproductive decision making among postpartum WLHIV. It was hypothesized that pregnancy intentions would primarily be influenced by the risk of mother-to-child transmission (MTCT) of HIV, partners' and families' preferences, and community opinion.

Methods: WLHIV in rural South Africa (n = 165) were assessed at 12 months postpartum regarding demographics, medical history, fertility desires, intimate partner violence (IPV), depression, and knowledge of prevention of MTCT (PMTCT) and HIV. A conjoint survey was used to estimate the relative importance of factors hypothesized to be associated with reproductive decision-making when factor-associated scenarios occurred.

Results/Hypotheses: Women were a mean of 28 years old (SD = 5.71), having a monthly household income of ~USD\$70. Using conjoint analysis, decision paths associated with reproductive intentions were explored. Risk of MTCT of HIV (Mean = 0.43; SD = 0.33) had the greatest impact on decision making, followed by partners' desires (M = 0.22; SD = 0.18), family preferences (M = 0.18; SD = 0.13), and community opinion (M = 0.17; SD = 0.13). PMTCT was most important to women with greater HIV and PMTCT knowledge, who placed less emphasis on partner, family, and community preferences. In contrast, those who had been diagnosed with HIV for a longer period of time placed more emphasis on partner preference and community opinion, and less importance on MTCT risk. PMTCT was less important to women experiencing psychological IPV, and those experiencing psychological and physical IPV gave more importance to community opinion. Those reporting clinically significant depression also placed less importance of PMTCT and more on community opinion (all *p* values < 0.05).

Conclusions: Findings highlight the impact of knowledge, maternal depression and IPV on reproductive decision making, and the need for individually tailored, focal perinatal interventions to support the unique circumstances of women living with HIV. Results underscore the need for perinatal preconception counselling for women during follow up and routine HIV care; physicians should consider inclusion of families and/or partners in the process.

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Paper Session 14: Advances in Medical Decision Making 4:30 PM-4:45 PM

DECISION-MAKING UNDER CLINICAL UNCERTAINTY: PROVIDER PERSPECTIVES ON ADJUVANT CHEMOTHERAPY FOR STAGE II COLON CANCER

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Objective: In light of the lack of consensus and evidence supporting benefit and use of adjuvant chemotherapy, guidelines from the National Comprehensive Cancer Network (NCCN) recommend that providers discuss risks and benefits, supporting evidence, associated morbidity, and high-risk characteristics of adjuvant chemotherapy with stage II colon cancer patients when presenting treatment options. However, little is known about the factors impacting provider decision-making and recommendations for use of adjuvant chemotherapy in the context of clinical uncertainty.

Methods: Providers were recruited from eight US institutions on the East Coast using convenience sampling. Actively practicing health care providers who interact with or participate in the care of stage II colon cancer patients were eligible. Providers completed a 30–45 minute phone interview. Interviews were transcribed, and transcripts were coded for qualitative analysis.

Results: A total of 42 providers were interviewed. Oncologists (51%), surgeons (21%), and nurses (14%) were the most common provider types, with a mean of 16 years experience. Providers varied in how they made recommendations for treatment and involved patients in the process. Though most providers were aware of NCCN guidelines, their use in practice varied from “living and breathing” the guidelines to questioning their validity. While some providers made great effort to involve patients in decision-making, others felt their role was to give a recommendation. Overall, providers were consistent in prioritizing clinical information over patient preferences or circumstances (i.e. cultural beliefs) when making a recommendation. Patient knowledge and interest in treatment options were identified as key facilitators of patient involvement in the decision-making process, while time constraints, health literacy, and language differences were commonly reported barriers.

Conclusions: Findings suggest that providers are not consistently involving patients in treatment decision-making or following recommended guidelines for discussing the benefits and risks of adjuvant chemotherapy among this patient population. Given the critical role that provider communication and recommendation plays in shaping patient treatment decisions, particularly in the context of clinical uncertainty, more research and efforts are needed to enhance provider education, patient-provider communication, and patient involvement in the decision-making process.

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Paper Session 15: Family Context and Health 3:30 PM-3:45 PM

LATINO ADVANCED CANCER PATIENTS' AND THEIR CAREGIVERS' PREFERENCES FOR ADVANCE CARE PLANNING COMMUNICATION

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Background: Advance care planning (ACP) is associated with better quality of life at the end of life (EoL) among advanced cancer patients; it has also been shown to be associated with patients being more likely to receive care consistent with their preferences. Unfortunately, Latino advanced cancer patients engage in ACP at much lower rates than their non-Latino counterparts. To improve Latino advanced cancer patients' engagement in ACP, it is critical to understand what patients' and caregivers' preferred methods of communicating about ACP.

Methods: A mixed-methods approach was used in the present study. In the quantitative phase of the study, Latino advanced cancer patients (n=20) and their caregivers (n=9) completed a brief survey assessing rates at which they engaged in discussions around EoL care and advanced directives (DNR orders, living will, health care proxy). In the qualitative phase, patients and caregivers were interviewed about cultural, religious, and familial beliefs that influence engagement in ACP and their preferences for communication of ACP.

Results: Quantitative results indicated that Latino advanced cancer patients engage in ACP discussions with their family members at much higher rates (30–50%) than with their doctors (10–45%). Qualitative findings highlighted two key themes. First, Latinos' cultural, religious, and familial beliefs influenced their engagement in ACP. Namely, Latino study participants held medical advice from their doctors in high regard, preferred family members to be involved in ACP discussions, and often held optimistic religious beliefs that were antithetical to ACP approaches to being instructed on how to discuss EoL care preferences.

Conclusions: Key cultural, religious, and familial beliefs and dynamics influence whether Latino advanced cancer patients and their caregivers engage in ACP. Promising next directions for improving communication around and engagement in ACP may be through addressing cultural and religious beliefs in ACP discussions, providing information about ACP from the doctor, recognized involvement of family members in ACP discussions and decision-making, and instructions on how to engage in EoL care and ACP discussions.

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Paper Session 15: Family Context and Health 3:45 PM-4:00 PM

AN EXPLORATION OF STRUCTURAL AND CONTEXTUAL PATTERNS IN FAMILY HEALTH HISTORY KNOWLEDGE AMONG AFRICAN AMERICAN ADULTS

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Background: Family health history (FHH) is a strong risk factor for many chronic diseases. Ethnic minorities have been found to have a low awareness of their FHH, which may pose a contributing factor to health disparities.

Purpose: The purpose of this mixed-methods study was to identify structural and contextual patterns in African American adults' knowledge of their FHH.

Methods: Thirty-two African American adults (mean age=42.7 years) completed individually administered family network interviews. Participants' 3-generation family pedigree served as a visual aid to guide their interview. Participants identified biological relatives who, to their knowledge, had ever been diagnosed with any of the following: cancer, diabetes, kidney disease, hypertension, heart disease, and mental illness. To contextualize quantitative findings, participants were asked to discuss *how* they learned about the health history of the relatives they identified during their family network interview.

Results: Average network size was 29.4 relatives (SD=15.6; Range= 10–67). Participants, on average, only reported FHH information for 9.3 relatives, less than a quarter (24.1%) of their familial network. The most commonly reported diagnosis was hypertension (mean= 4.6 relatives), followed by cancer (mean=2.6 relatives), diabetes (mean=2.3 relatives), heart disease (mean=2.1 relatives), mental illness (mean=1.8 relatives), and kidney disease (mean=0.8 relatives). Participants were more likely to report knowing their maternal FHH (30.0%) than their paternal FHH (22.0%). Logistic regression results show that participants were more likely to know the health history of relatives who were older (OR=1.04, $p<0.001$) and who discussed their health concerns with the participant (OR=4.89, $p<0.001$). Participants primarily reported knowing about one or more health conditions for their parents (65.0%), followed by their grandparents (54.1%), aunts/uncles (40.4%), siblings (28.2%), and cousins (7.6%). Qualitative contextual data suggests that FHH information is commonly transmitted during caretaking activities (ex. attending medical appointments and providing medication assistance), during a relative's illness, and after a relative's death. FHH knowledge is also facilitated by open, direct communication among relatives, and commonly occurs during gatherings such family reunions and holiday celebrations. Mothers, grandmothers, and female matriarchs were frequently described as being FHH information sources, in both maternal and paternal networks.

Conclusions: African Americans' FHH knowledge is limited, especially regarding paternal FHH, siblings, and extended relatives. More culturally and contextually meaningful public health efforts are needed to promote FHH sharing within African American families.

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Paper Session 15: Family Context and Health 4:00 PM-4:15 PM

FAMILY HEALTH HISTORY KNOWLEDGE AMONG PARTICIPANTS IN THE DR. SUSAN LOVE RESEARCH FOUNDATION'S THE HEALTH OF WOMEN (HOW) STUDY™

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Introduction: Increasingly, individualized and risk-based approaches to disease prevention and screening are being leveraged. An important component to these risk-based approaches is a patient's ability to recall family health history (FHH); however, studies indicate that recall of FHH is low. While research has measured general knowledge of FHH, few studies have characterized patterns and gaps in FHH that patients are or are not able to accurately report. This study aimed to examine the extent to which individuals can recall comprehensive information about FHH and whether this ability varies by the type of disease or the type of relative.

Methods: This analysis leverages a large dataset of over 50,000 individuals with and without breast cancer from Dr. Susan Love Research Foundation's The Health of Women (HOW) Study™ to evaluate the extent to which respondents are able to report their FHH for multiple diseases including, breast, ovarian and colon cancer, as well as Crohn's disease, ulcerative colitis, diabetes, asthma, high blood pressure, high cholesterol, stroke, migraine, Parkinson's disease, multiple sclerosis, lupus and scleroderma. We included women who completed the family history module of the study (n=22106). We used (1) paired t-tests to compare the proportions of individuals who did not know their FHH by disease type and type of relative (son, daughter, brother, sister) and (2) multivariable regression to examine the association between sociodemographics and recall of FHH for breast cancer.

Results: We found that individuals' ability to recall FHH was lower than for personal health history and varied by disease area. Participants were least likely to report not knowing FHH of breast cancer (3.1%), and were most likely to report not knowing their FHH of high cholesterol (24.6%). Further, participants were less likely to recall the extent of family history for breast and colon cancer among male relatives (i.e., sons and brothers) than female relatives. In our multivariable model, education, race/ethnicity, insurance status, and sexual identity were associated with breast cancer FHH recall.

Conclusions: Findings from this study indicate that individuals need additional support to collect FHH information about certain common heritable diseases (e.g., high cholesterol) and from male family members. Publicly available resources, such as the Surgeon General's My Family Health Portrait, may be useful tools for improving FHH recall.

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Paper Session 15: Family Context and Health 4:15 PM-4:30 PM

FACTORS ASSOCIATED WITH REACH OF INFORMATION ABOUT RISK AND RELATIVE'S HEALTH IN FAMILIES AFFECTED BY ALZHEIMER'S DISEASE

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Background: Little is known about communication patterns in families affected by common yet complex conditions where family history confers increased risk. One example is Alzheimer's disease (AD), a condition in which family members negotiate both informal caregiving roles and shared AD risk. In this context, we investigate how AD family history, discussion partner attributes, and interpersonal ties shape communication patterns about AD. As well, we explore race differences in these patterns.

Methods: Seventy-two respondents from 30 families with a relative affected by AD enumerated family members and important others and indicated with whom they discuss AD, the health of their affected relative, and their family risk of AD. Analyses focus on adult family and important others enumerated in families with multiple participants, resulting in 777 total relational ties. Logistic regressions were fitted with GEE adjustment for within family clustering.

Results: Forty-three percent of respondents indicated family history of AD beyond their affected relative, with no difference due to race. Discussion participation varied with 60%, 55%, and 20% of enumerated network members on average involved in conversations about AD generally, their affected relative's health, and AD family risk, respectively. Race differences were observed only for family risk discussions, with white participants reporting more discussion than black participants (27% vs. 3%, $p < .001$). Regardless of discussion topic, there was a tendency for information to flow between biologically related family members (ORs from 3.62 to 5.72, $ps < .001$) and with emotional supports (ORs from 2.54 to 4.13, $ps < .01$). General discussions about AD were more likely to involve spouses (OR=3.60, $p < .01$) and social kin (OR=3.10, $p < .001$). Discussions about the affected relative's health occurred among those of the same generation, rather than those in older and younger generations (OR=0.31 and OR=0.36, respectively; $ps < .03$). Discussions about AD family risk involved spouses (OR=2.76, $p = .02$), tangible supports (OR=2.03, $p = .04$), and were more likely to occur in families with a family history of AD (OR=3.35, $p = .03$).

Conclusions: Results suggest important nuances in how discussion partners are chosen based on content. Network characteristics identified here can inform future health education programs to address potential barriers to communication, thus extending the reach of AD information in at-risk families.

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Paper Session 15: Family Context and Health 4:30 PM-4:45 PM

PARENTING STYLES, FOOD-RELATED PARENTING PRACTICES, AND CHILDREN'S HEALTHY EATING

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Parents exert a strong influence on their children's diet. While authoritative parenting style is linked to more healthful dietary outcomes in children, little is known about the mechanisms that mediate this relationship. This study examined whether parenting styles (authoritative, authoritarian, and permissive) were associated with three specific food-related parenting practices (mealtime structural practices (e.g., eating meals as a family), parent modeling of healthy food, and household food rules) and whether these food-related parenting practices mediated the association between individual parenting styles and children's dietary outcomes. Participants were 202 mother-child dyads. Among mothers (67% married, 82% college graduates), mean age was 41 years ($SD = 6.1$). Children (51% female) had a mean age of 10 years ($SD = 0.9$). Mothers reported on their parenting style using the Parenting Styles and Dimensions Questionnaire. Children's diet was assessed with two telephone-based 24-hour dietary recalls. Dietary outcomes included the Healthy Eating Index (HEI)-2010 score, calorie-adjusted daily servings of combined fruit and vegetables, and mean daily added sugars (by total sugars). Correlations tested initial associations between the variables of interest. Using PROCESS, multiple mediation cross-sectional analyses with parallel mediators using 10000 bootstraps were performed. After controlling for relevant covariates, partial correlations indicated authoritative parenting style was positively associated with mealtime structural practices ($r = .219, ps < .05$). Mealtime structural practices was positively associated with children's HEI-2010 score ($r = .270, ps < .01$). Additional correlations among the parenting styles and food-related parenting practices were significant for mealtime structural practices and parent modeling of food rules ($r = -.184$ to $-.294, ps < .05$). No significant associations emerged among the three parenting styles and children's dietary outcomes. Mealtime structural practices mediated the relationship between authoritative parenting and HEI-2010 score ($B = 6.020, p = .018, CI = [0.0047, 0.1134]$). No other mediating relationships were significant. Mealtime structural practices may be an effective way for authoritative parents to provide a healthy diet for their children. Further examination of the features by which mealtime structural practices serve as a mechanism for parents to support healthy eating among their children may improve children's diet quality.

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Paper Session 16: Influences on Quality of Life Across the Lifecourse 3:30 PM-3:45 PM

YOGA AND MINDFULNESS BASED INTERVENTION FOR STRESS AND QUALITY OF LIFE IN THIRD-GRADE STUDENTS

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Background: Stress is increasingly perceived as an issue that needs to be managed in educational settings. Yoga/mindfulness curricula may be a tool that can be used to teach children to manage stress and improve their sense of wellbeing.

Purpose: This study aimed to assess the impact of a yoga curriculum in an elementary school on student quality of life.

Methods: A randomized controlled trial was used to assess the impact on quality of life on third-grade students from a public school in New Orleans, Louisiana who screened positive for stress at the beginning of the school year. Students were randomized to an intervention group of 20 students receiving small group yoga/mindfulness activities for 8 weeks with an instructor from a local organization using Yoga Ed curriculum, and a control group of 32 students receiving care as usual.

The Brief Multidimensional Students' Life Satisfaction Scale- Peabody Treatment Progress Battery version (BMSLSS-PTPB) was used to assess life satisfaction and the Pediatric Quality of Life Inventory (PedQL) was used to assess quality of life in baseline, midline and endline surveys.

The intervention and control groups were compared at baseline. Differences were tested, in frequencies for categorical variables with chi-square or Fisher's exact tests, and in means for continuous variables using t-tests. Generalized estimating equations (GEE) were used to model the repeated measurement of the continuous scores. The models were adjusted for the time at which the outcome was assessed, homeroom teacher assignment and student interest in yoga at baseline.

Results: Of the participants, 52 percent were male, 53 percent were white, 60 percent of had prior experience with yoga, 65 percent thought yoga would help them feel calm, and 34 percent reported being very interested in doing yoga. Only baseline interest in yoga differed between the intervention and control groups (p-value 0.01).

In GEE models adjusted for time, the yoga based intervention was associated with a 14.17 unit increase in student emotional PedQL (p-value 0.001) and a 7.43 unit increase in student psychosocial PedQL (p-value 0.01). These results were not attenuated by further adjustment.

Conclusions: The intervention in this study was associated with a significant improvement in emotional and psychosocial quality of life when compared to the control group, suggesting that yoga/mindfulness interventions may improve stress management skills among students.

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CITATION AND MERITORIOUS AWARD WINNER

Paper Session 16: Influences on Quality of Life Across the Lifecourse 3:45 PM-4:00 PM

OXYTOCIN: A NOVEL BIOMARKER RELATED TO INFLAMMATION AND QUALITY OF LIFE IN OVARIAN CANCER

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Research on the central and peripheral hormone oxytocin (OT) has primarily focused on neurohypophyseal OT and its role in human social behavior, bonding and the stress response. Less research has examined the psychosocial consequences of peripheral OT. OT is synthesized and produced locally by multiple peripheral organs, including the ovary. *In vitro* and *in vivo* studies suggest a protective role for OT in ovarian cancer via anti-inflammatory and anti-tumor effects. However, no studies have examined relationships between peripheral OT, inflammation and psychosocial variables that may be influenced by inflammation (e.g. quality of life) in a cancer population. This study examines endogenous OT from the tumor microenvironment (ascites fluid) and its potential relationship with quality of life (QOL) outcomes in ovarian cancer. OT was measured in the ascites fluid of 108 ovarian cancer patients and relationships between OT, markers of inflammation (IL-6) and QOL were examined. High levels (> 200 times circulating levels in healthy, non-pregnant women) of naturally occurring OT were observed in the ascites fluid of ovarian cancer patients (mean=191.2 pg/mL; range=1.7-2,383 pg/mL). Ascites OT was inversely related to both ascites IL-6 ($\beta=-.27, p=.007$) and plasma IL-6 ($\beta=-.20, p=.055$), suggesting anti-inflammatory activity. To test the hypothesis that OT inhibits inflammatory activity in ovarian cancer, *in-vitro* studies were performed and revealed basal OT secretion from four ovarian cancer cell lines, and a direct inhibitory effect of OT on IL-6 (IL-6 levels reduced by 40%; $p=.03$). Given known relationships between inflammation and poorer QOL in cancer patients, we examined whether ascites OT was associated with QOL via its relationship with IL-6. Path analyses indicated that higher levels of ascites OT were associated with higher patient total QOL (FACT-G; $\beta=.20, p=.02$), higher ovarian cancer specific QOL (FACT-O [subscale]; $\beta=.29, pp=.02$), controlling for age, stage, and correlations among the outcome variables. In bootstrapped mediation analyses, the effect of ascites OT on overall QOL ($\beta=.07, 95\% \text{ CI}=.01, .12$) and patient-rated disability ($\beta=-.06, 95\% \text{ CI}=-.11, -.01$) was found to be fully mediated by IL-6. The effect of ascites OT on higher ovarian cancer specific QOL was only partially mediated by IL-6 ($\beta=.06, 95\% \text{ CI}=.002, .12$). This research identifies OT as a novel biomarker in the ovarian tumor microenvironment with both direct anti-inflammatory effects and relevance for patient QOL. Ongoing research is investigating the source of OT in the ovarian tumor microenvironment and examining potential top-down processes that may contribute to individual differences in OT in the tumor microenvironment.

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Paper Session 16: Influences on Quality of Life Across the Lifecourse

4:00 PM–4:15 PM

TRENDS IN RACIAL/ETHNIC DISPARITY OF HEALTH-RELATED QUALITY OF LIFE IN MEDICARE ADVANTAGE BENEFICIARIES (1998–2012)

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Background: Hispanic, Non-Hispanic Asian/Pacific Islander (NH-API), and Non-Hispanic Black (NH-Black) cancer survivors often report poorer health status compared to Non-Hispanic Whites. Recent data pooled from 1998–2007 from the National Cancer Institute (NCI)'s SEER-MHOS (Surveillance, Epidemiology and End Results-Medicare Health Outcomes Survey) on Medicare Advantage (MA) beneficiaries reveal differences in health-related quality of life (HRQoL) by race/ethnicity. We conducted a trend analysis using SEER-MHOS data to determine if differences in HRQoL by race/ethnicity are increasing, decreasing or plateauing among MA beneficiaries with cancer as compared to non-cancer controls.

Methods: We sampled adults ages 65+ included in SEER-MHOS (1998–2012). HRQoL measures included the Physical and Mental Component Scores (PCS/MCS), harmonized from the Medical Outcomes Short Form (SF-36) (1998–2005) and the Veteran's RAND 12-Item Survey (VR-12) (2006–2012). We compared PCS/MCS by race/ethnicity among individuals with/without cancer, adjusted for comorbidities, gender and region, and further adjusted by time since/stage of diagnosis for those with cancer. Absolute (between-group variance; BGV) and relative (mean log deviation; MLD) indices of disparity were generated from the NCI's Health Disparity Calculator. JoinPoint was used to calculate annual percent changes (APC) in PCS/MCS and test disparity trends over the study period.

Results: Both cancer (NH-White=61,676; NH-API=5,676; NH-Black=6,655 and Hispanic=6,512) and non-cancer cohorts (NH-White=239,988; NH-API=32,377; NH-Black=30,700 and Hispanic=41,135) consisted predominantly of NH-White beneficiaries. NH-Blacks and Hispanics reported significantly lower PCS than NH-Whites/NH-Asians over the entire study period. MCS among NH-Blacks/NH-Asians/Hispanics decreased between 1998–2012. Difference in MCS among race/ethnicity groups increased over the study period in beneficiaries with [BGV APC=13.67; C.I (9.9, 17.6); MLD APC= 13.71; C.I (9.9, 17.6)] and without cancer [BGV APC=34.25; C.I (0.1–80.1); MLD APC=15.7; C.I. (12.4, 19.0)]. Increases in both BGV and MLD indices for PCS were only evident in those without cancer [BGV APC=11.82; C.I (8.2,15.6); MLD APC=12.77; C.I (8.6,17.1)].

Conclusions: Our analysis suggests rising disparities in mental HRQoL by race/ethnicity in older adults with cancer. Future research should continue to follow trends in HRQoL and explore racial/ethnic disparities in unmet health care needs.

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Paper Session 16: Influences on Quality of Life Across the Lifecourse

4:15 PM–4:30 PM

FINANCIAL STRAIN AND QUALITY OF LIFE IN BREAST CANCER

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Objective: To assess the cross-sectional association between financial strain and key elements of physical and emotional quality of life among women with breast cancer.

Method: Across two samples, 175 women with breast cancer completed online surveys as part of NIH-funded research. Participants completed validated measures of financial strain, physical quality of life (symptom burden, perceived health, and functional status), and emotional quality of life (emotional functioning, depression, and anxiety). Analyses controlled for key covariates that included age, education level, marital status, presence of metastases, and time since diagnosis.

Results: Results showed that 33.7% of women experienced financial strain, which was associated with worse physical and emotional quality of life. Financially strained women reported worse physical symptom burden ($p < .001$), perceived health ($p < .001$), and functional status, including spending >3 additional days in the past month mainly in bed ($p = .005$). They also reported worse emotional functioning ($p = .001$), and worse depression symptom severity in particular ($p < .001$), but not worse anxiety. Effect sizes were clinically significant (Cohen's $d = 0.49–0.85$).

Conclusion: The present investigation illustrates the importance of financial strain in breast cancer. Clinicians are encouraged to explore financial stressors and strains in their depressed patients.

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Paper Session 16: Influences on Quality of Life Across the Lifecourse 4:30 PM-4:45 PM

IMPROVING PARENTS & CHILDREN'S ASTHMA-RELATED QUALITY OF LIFE

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Background: Asthma is a major public health problem in childhood with heavier burden experienced among members of racial/ethnic minority groups. Frequent symptomatic days requiring urgent management, disturbed sleep, and limitations in daily activities due to asthma contribute to worsening quality of life (QOL) in children who have asthma and in their parents.

Methods: Children (7–12 years old) were randomly assigned to treatment or comparison groups. The intervention was designed to improve children's asthma self-management knowledge, skills, problem-solving. Data on QOL were collected from children at baseline and again at 12 months. QOL was measured with Juniper's scales for children and their caregivers.

Sample: A total of 257 children and their parental caregiver completed the 12-month study and included 163 boys (63.6%), 94 girls (36.4%); of which 58% were Hispanic, 21% were Black, and 19% were non-Hispanic white (white). The children's mean age was 8.82 years (SD=1.2).

Results: The groups were not significantly different at baseline (sample demographics: gender, age, race/ethnicity; and QOL). After the intervention, QOL was significantly improved in the treatment group. **Children's QOL:** QOL total score, $F=7.53$, $p=.007$; QOL emotional functioning, $F=4.05$, $p=.02$; and QOL asthma symptoms, $F=3.28$, $p=.04$. In terms of activity limitations due to asthma, there were no between treatment group differences – both groups had fewer days with limited activity. **Parents' QOL:** QOL total score, $F=7.29$, $p=.007$; QOL emotional functioning, $F=3.27$, $p=.04$; and QOL family activities, $F=5.29$, $p=.006$.

When comparing racial/ethnic groups, additional information is revealed. There were significant differences at baseline in children's QOL: The mean scores for children's total QOL scores at baseline were significantly worse for Blacks - 62.30, followed by Hispanics - 52.34, and best for whites - 48.86 [$F=7.05$, $p=.001$]. The children's QOL improved after the intervention, but there continued to be significant differences between racial/ethnic groups 12 months later: QOL total score, $F=3.62$, $p=.03$.

Discussion: The intervention significantly improved the treatment groups' QOL. It is important to note that the treatment and comparison group were composed of equivalent groups in terms of gender and race/ethnicity. The further examination of QOL by racial/ethnic group did reveal significant differences in QOL for children who are members of racial/ethnic minority groups. Nevertheless, their scores also improved after the intervention. While this is a positive finding, the continued differences in QOL reported by children who are ethnic/racial minority group members should be noted. Interventions may require tailoring to address specific issues of concern to parents and children with asthma who are members of racial/ethnic groups.

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Paper Session 17: Sleep and Fatigue in the Context of Chronic Disease 3:30 PM-3:45 PM

CANCER-RELATED PROBLEMS AND SLEEP QUALITY IN LONG-TERM CANCER SURVIVORS: A REPORT FROM THE STUDY OF CANCER SURVIVORS-1

Sara Strollo, MPH, Elizabeth Fallon, MPH, Ph.D., Tenbroeck Smith, MA

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Introduction: Poor sleep is a top five unmet need among cancer survivors, resulting in lower physical, emotional, and cognitive functioning. While cancer-related problems are known to effect sleep quality within the first 5 years of survivorship, less is known about long-term survivors (> 5 years). This study assessed the association between cancer-related problems and sleep quality among long-term survivors.

Methods: Data from the third survey of the American Cancer Society's Study of Cancer Survivors (SCS-1) was used for this study. The nationwide sample (N=1,979) includes survivors of 10 cancers (30% Breast; 20% prostate), 9 years (M=8.9 sd=0.6) post-diagnosis, and was mostly female (62%), non-Hispanic white (90%), with a mean age of 55.5 (sd=11.1) years. Sleep quality was assessed by dichotomizing the 1-item component score of the Pittsburgh Sleep Quality Index. Cancer-related physical distress, emotional distress, employment and financial problems, and fear of recurrence were measured with the Cancer Related Problems in Living Scale. Adjusting for medico-demographics, behavioral factors, and sleep medication use, multivariable logistic regression determined the association between cancer-related problems and poor sleep quality.

Results: Almost 20% (n=388) reported poor sleep quality, of which 51% (n=196) reported sleep medication use. The highest rates of poor sleep quality were reported among survivors of non-Hodgkin lymphoma (30.4%), kidney cancer (27.3%), and lung cancer (27.0%). Survivors with greater cancer-related physical distress (OR=1.18; 95% CI=1.11, 1.25) and greater fear of recurrence (OR=1.08; 95% CI=1.01, 1.15) had significantly higher odds of poor sleep quality after adjusting for covariates and sleep medication use. Sensitivity analyses revealed the stability of the effect of cancer-related physical distress on poor sleep quality when removing sleep medication from the model (OR=1.18; 95% CI=1.1, 1.3) and excluding participants with sleep medication use (OR=1.19; 95% CI=1.1, 1.3).

Implications: Cancer-related problems continue to impact sleep quality among cancer survivors 9 years post-diagnosis. Clinicians should assess and treat cancer-related physical distress as a possible underlying cause of poor sleep quality among patients with a cancer history. Future research will determine specific cancer-related factors interfering with long-term survivor sleep quality to improve symptom management and health outcomes.

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Paper Session 17: Sleep and Fatigue in the Context of Chronic Disease 3:45 PM-4:00 PM

GOAL COGNITIONS, FATIGUE, PAIN, AND FUNCTIONAL WELLBEING IN LUNG CANCER PATIENTS

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Background: Because lung cancer is usually diagnosed in an incurable stage, symptom management is a large component of patient care. Fatigue and pain are two of the most common, disruptive, and distressing symptoms to patients. These symptoms can negatively affect patients daily, interfering with their routines and eroding their sense of value to daily life. Prior work has identified the centrality of personal goals to wellbeing during illness and suggested a cross-sectional association between goal cognitions and symptoms among lung cancer patients. The aim of the present longitudinal study was to evaluate the relation between goal cognitions and daily fatigue, pain, and related aspects of wellbeing.

Methods: Multilevel modeling was used to analyze 1,029 reports (M per person = 20.3, SD = 1.34) of fatigue and pain (FACT-L), functional wellbeing (FACIT-Pal), and goal cognitions (State Hope Scale) from 50 lung cancer patients (21 males; M age = 69 yrs, SD = 8.8 yrs; 72% advanced disease) enrolled in a 21-day diary study. Goal cognitions were disaggregated into individual-level averages. Models adjusted for age, baseline depression, physical functioning, and treatment type.

Results: People who perceived more pathways to their goals reported less daily fatigue and pain, adjusting for covariates ($Est.$ = $-.26$, p = $.035$). This effect was maintained in models that adjusted for the previous day's level of fatigue and pain ($Est.$ = $-.14$, p = $.031$). People who reported higher agency in meeting their goals reported higher daily functional wellbeing ($Est.$ = $.27$, p = $.027$). This effect trended in the model that adjusted for the previous day's level of functional wellbeing ($Est.$ = $.11$, p = $.058$).

Conclusions: Results provide longitudinal evidence that how patients think about their personal goals and plans affects their daily experience of fatigue and pain and related aspects of wellbeing such as perceived independence, usefulness, and ability to make each day count. Interventions that help patients perceive pathways to personal goals and build agency for working on those goals may help address these prominent physical symptoms and related aspects of wellbeing.

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CITATION AWARD WINNER

Paper Session 17: Sleep and Fatigue in the Context of Chronic Disease 4:00 PM-4:15 PM

NOVEL BIOMARKERS OF CHEMOTHERAPY-INDUCED MUSCLE DAMAGE, CANCER-RELATED FATIGUE AND EXERCISE: A RCT IN 350 CANCER PATIENTS

Karen Mustian, PHD, MPH¹, Anita Peoples, PHD, MPH¹, Po-Ju Lin, PhD, MPH, RD², Ian Kleckner, PhD¹, Luke Peppone, PhD, MPH¹, Michelle Janelins, PhD, MPH¹, Matt Asare, PHD¹, Julia E. Inglis, PhD, RD¹, Jessica Miller, BA, CCRP³, Jeffrey Giguere, MD⁴

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Background: Chemotherapy may lead to systemic muscle damage. Up-regulation of developmental myosin light chain 5 (MYL5) and myosin heavy chain 8 (MYH8) genes is required for normal muscle regeneration in response to damage. However, secretion of MYL5 and MYH8 proteins into the serum suggest degradation of muscle, which, in turn, may lead to cancer-related-fatigue (CRF). In this study, we investigated (1) the effect of an exercise intervention, Exercise for Cancer Patients (EXCAP), on mRNA gene expression and serum protein levels of MYL5 and MYH8 and (2) the association of these novel biomarkers with CRF.

Methods: Chemotherapy naïve cancer patients ($N=350$; mean age = 55.7) from 39 community oncology practices throughout the U.S. affiliated with the URCC NCORP Research Base participated in this nationwide, multi-center, phase III RCT. Patients were randomized into 2 groups: (1) chemotherapy and (2) chemotherapy plus a 6-week aerobic and resistance exercise prescription-EXCAP. Gene expression and protein levels of MYL5 and MYH8, as well as CRF were assessed pre- and post-intervention from whole blood by qPCR, from serum by Luminex assays, and from patient-report by the Multidimensional Fatigue Symptom Inventory, respectively.

Results: T-tests show MYL5, but not MYH8, mRNA levels were significantly up-regulated from pre- to post-intervention in exercisers and controls (all $p \leq 0.01$) with no significant group difference. Additionally, MYL5 and MYH8 serum protein levels significantly increased from pre to post in controls (all $p \leq 0.05$), but remained stable in exercisers. Significant group differences in these serum proteins ($p \leq 0.01$) suggest greater muscle degradation in non-exercisers. Pearson correlations revealed trends suggesting increases in MYL5 and MYH8 serum proteins are associated with increases in CRF ($r = 0.09$ and $r = 0.11$, respectively, all $p \leq 0.10$).

Conclusions: Results suggest EXCAP exercise is protective from chemotherapy-induced muscle damage via its effects on MYL5 and MYH8, and changes in these novel biomarkers may mediate changes in CRF. Further research is needed to confirm these findings.

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MERITORIOUS AWARD WINNER Paper Session 17: Sleep and Fatigue in the Context of Chronic Disease 4:15 PM-4:30 PM

WEIGHT-BASED STIGMA IS ASSOCIATED WITH SLEEP QUALITY AMONG EMERGING ADULTS

Kristina Decker, Masters Degree¹, Idia B. Thurston, Doctorate¹, Rebecca Kamody, Masters Degree², Caroline Kaufman, B.A.¹, Andrew Paladino, BA¹, Girardin Jean-Louis, PhD³

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Background: Weight-based stigma is both pervasive and socially accepted in U.S. culture. Recent research has illuminated associations between greater weight stigma and poorer health outcomes. Research is limited on the association between weight-based stigma and sleep; however, literature on race-based stigma suggests that poor sleep quality drives the association between perceived stigma and worse health. We explored associations between external and internal weight stigma (e.g., hearing disparaging remarks about one's weight, believing oneself to be lazy because of weight) and sleep quality, accounting for associations with depression and Body Mass Index (BMI).

Methods: 436 emerging adults (59% White, 18% Black, 10% Hispanic, 6% Asian, 5% Multiracial, 3% Other; 74% female) enrolled through Amazon Mechanical Turk and a university subject pool. These 18-25-year-olds ($M_{age}=21.59$, $SD=2.32$) completed measures of depressive symptoms (Center for Epidemiologic Studies Depression Scale), internal weight stigma (Weight Self-Stigma Questionnaire), external weight stigma (Stigmatizing Situations Inventory), and sleep quality (Pittsburgh Sleep Quality Index). Reported height and weight were used to calculate BMI (kg/m^2), which ranged from 13.93–64.15 ($M_{BMI}=26.0$, $SD=6.63$). A hierarchical linear regression was conducted across 3 steps to predict sleep quality. Sex and race/ethnicity were entered in Step 1; BMI and depressive symptoms in Step 2; and external and internal weight stigma in Step 3.

Results: The final step of the model was significant ($F(10, 425)=23.97$, $p<.001$, $Adj.R^2=.36$) with being female ($B=-1.07$, $SE=.31$, $p<.001$), having greater depressive symptoms ($B=-.14$, $SE=.01$, $p<.001$), and perceiving greater external weight stigma ($B=-1.13$, $SE=.36$, $p<.01$) associated with poorer sleep quality. On average, Hispanic ($B=1.10$, $SE=.46$, $p<.05$), Asian ($B=1.45$, $SE=.58$, $p<.05$), and "Other race" ($B=2.06$, $SE=.86$, $p<.05$) participants had better sleep quality than White participants. BMI and internal weight stigma were not significant predictors.

Discussion: Findings highlight a unique association between external weight stigma and sleep quality, which align with race-based stigma research. Future research should verify such associations with objective sleep measures as derived from actigraphy. Results also underscore the important need for policies that safeguard against weight stigmatization across multiple external domains such as: school, work, clinic, and community settings.

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Paper Session 17: Sleep and Fatigue in the Context of Chronic Disease 4:30 PM-4:45 PM

EVALUATION OF PROMIS SLEEP MEASURES IN ETHNICALLY DIVERSE OVERWEIGHT OR OBESE PRIMARY CARE PATIENTS WITH AND WITHOUT DEPRESSION

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Objective: Reliable and valid, simple measures of sleep disturbance (quality) and sleep-related impairment (sequelae) may improve characterization and management of overweight and obese patients, including those with comorbid depression, in primary care.

Methods: Baseline data on the PROMIS sleep disturbance and sleep-related impairment short forms (8 items each) and on psychosocial and biobehavioral measures from two ongoing randomized trials were analyzed separately: RAINBOW, 409 adults of mixed race and ethnicity with comorbid obesity and depression; Vida Sana, 189 Latinos who were overweight or obese and at high risk of type 2 diabetes. We tested the reliability of both sleep measures using item correlations and Cronbach's alpha, and examined their validity using ANOVA and χ^2 tests of associations with other measures.

Results: RAINBOW participants (70% female, 71% non-Hispanic White, 51.0 [SD, 12.1] years) had mean (SD) BMI 36.7 (6.4) kg/m^2 , PHQ9 depression score 13.8 (3.1), and T scores of sleep disturbance 52.7 (3.4) and impairment 56.9 (6.8). Vida Sana participants (62% female, all Latino, 50.3 [12.2] years) had BMI 32.5 (5.7), PHQ9 5.4 (4.5), sleep disturbance 51.6 (8.9), and impairment 51.2 (9.2). Item correlations ranged 0.22–0.70 in RAINBOW and 0.22–0.87 in Vida Sana for both sleep measures, all with high Cronbach's alpha (0.86–0.92). In both studies, higher sleep disturbance and impairment were significantly associated with greater depressive symptoms, stress, anxiety, and poorer health-related quality of life; higher sleep impairment was associated with younger age. In RAINBOW, higher sleep disturbance was significantly associated with older age and lower physical activity, while higher sleep impairment was associated with greater disability and more negative problem-solving orientation and more avoidance tendency. In Vida Sana, higher sleep disturbance and impairment were significantly associated with lower food security, lower self-efficacy with weight control and exercise.

Conclusions: Both PROMIS sleep measures showed good scale reliability and convergent validity with related health risk measures in two independent, ethnically diverse samples. Impaired sleep quality and resulting daytime symptoms are common in primary care patients with excess weight and comorbid depression or other cardiometabolic risk factors. The PROMIS sleep short forms may have clinical utility in primary care settings.

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Paper Session 18: Insights into Disordered Eating 3:30 PM-3:45 PM

THE RELATION BETWEEN PERSISTENT PROBLEMATIC EATING AND HEALTH STATUS AMONG ADULTS AT HIGH RISK OF HOSPITALIZATION

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Background: Persistent problematic eating, such as under- or overeating, increases risk for eating disorders or obesity, is associated with distress, and can onset or worsen with increased stress, such as when experiencing complex medical problems. This study examines the relation between persistent problematic eating, health status, and future hospitalization among adults at high risk of hospitalization.

Methods: Participants were 2,000 adults (age=63 ± 16y; 86% Black; 63% female) enrolled in a RCT comparing a hospital-based intervention to standard care, who had been hospitalized in the past year or were recruited while in the emergency department. Participants were assessed every three months. At intake, participants answered the question, “In the past two weeks, how often have you been bothered by poor appetite or overeating?” For this study, persistent problematic eating referred to poor appetite or overeating that occurred nearly every day (vs more than half, several, or no days); non-responders (*n*=11) were excluded from analyses.

Results: At intake, 17% endorsed persistent problematic eating. Compared to their counterparts, individuals with persistent problematic eating were more likely to be female, endorse worse ratings of overall health, and have greater impairment in activities of daily living (ADL) and instrumental ADL (*ps*<.001); they also endorsed worse ratings of overall mental health and greater anxiety symptoms, psychosomatic complaints, and disordered personality traits (*ps*<.001). There were no between-group differences in age, race, ethnicity, income, education level, or whether they were hospitalized or number of hospitalizations in the past year (*ps*>.10). Among the subset of participants (67%) who were alive one year after enrollment and reported hospitalizations in each of the 3-month follow-ups (responses from which were aggregated into one variable of “future hospitalizations”), individuals with persistent problematic eating, compared to those without, were more likely to be hospitalized over one year, controlling for study condition and whether they were hospitalized in the year prior (OR=1.5; 95% CI=1.1–2.1).

Conclusions: Persistent problematic eating is associated with poor physical and mental health and may portend worsening health (i.e., hospitalization). Results highlight the importance of identifying and addressing these behaviors, particularly among individuals with complex medical problems and high health care utilization.

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Paper Session 18: Insights into Disordered Eating 3:45 PM-4:00 PM

IMPULSIVITY AND AFFECT REACTIVITY PREDICT DISORDERED EATING ATTITUDES OVER TIME: A 6-YEAR LONGITUDINAL STUDY

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Introduction: Eating disorders (EDs) are associated with significant psychological and physical comorbidities and increased risk for mortality. Impulsivity and changes in negative affect (i.e., affect reactivity) are hypothesized to contribute to the development of EDs, and adolescence is a particularly high-risk time for the emergence of ED pathology. However, no studies have examined these prospective relationships in adolescents. The current study examined the relationship between impulsivity and affect reactivity as predictors of the development of ED-attitudes in adolescents over time.

Methods: 206 adolescents (ages 11–15 years) participated in a longitudinal study examining the development of psychopathology. ED-attitudes were assessed via the College Eating Disorders Screen (COEDS). Affect reactivity was measured as change in negative affect before and after a laboratory stressor using scores on the Positive and Negative Affect Schedule for Children (PANAS-C). Impulsivity was measured via the Eysenck Impulsivity Inventory.

Results: Results of latent growth modeling using an unconditional model suggest that ED-attitudes increase over time. When affect reactivity, impulsivity, and their interaction were added (controlling for baseline negative affect and sex), the model fit the data well: $\chi^2_{(df=41)} = 69.64, p = 0.004$; CFI = .96; TLI = .96; RMSEA = 0.05 (90% CI = 0.03 – 0.08). The interaction between impulsivity and affect reactivity significantly predicted the slope of ED-attitudes (std. est. = -.60, *p* = .033), such that for youth with greater affect reactivity, increases in impulsivity were more strongly related to increases in ED-attitudes over time, relative to less-affectively reactive youth.

Discussion: Findings suggest that greater levels of affect reactivity and impulsivity are key risk factors for the development of ED-attitudes in youth, and that youth high in both affect reactivity and impulsivity may be especially susceptible to developing ED-attitudes. Subsequent research should examine the relation between affect reactivity and impulsivity in predicting objectively measured ED-behaviors to better understand the link between these factors and the development of ED symptoms in addition to ED-attitudes. Further investigation may implicate affect reactivity and impulsivity as important targets for early intervention to prevent later onset of ED symptoms in adolescents.

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Paper Session 18: Insights into Disordered Eating 4:00 PM–4:15 PM

THE ASSOCIATION BETWEEN INTUITIVE EATING AND BODY PRE-OCCUPATION IS INDEPENDENT OF OBJECTIVE WEIGHT STATUS

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Background: Intuitive eating (IE) is an adaptive style of eating based on following the body's signals of hunger and fullness. IE is associated with many positive psychological factors, including body appreciation/acceptance, emphasis on body function over appearance, and lower body dissatisfaction and avoidance behaviors. The goal of this project was to extend previous literature by determining whether IE was associated with preoccupation with body shape and weight after adjusting for objective weight status in a diverse sample of adults.

Method: 192 adults (age: 36 ± 15 years, female: 138(72%), non-white: 86(45%), body mass index; BMI: 32 ± 7 kg/m²) completed a battery of self-report measures. The IE total score and its subscales were measured with the Intuitive Eating Scale-2. Shape and weight preoccupation were measured with the Shape Concern (SC) and Weight Concern (WC) subscales of the Eating Disorder Examination-Questionnaire. Objective weight status was assessed using measured BMI. Model covariates included age, gender, race, and BMI.

Results: Linear regressions revealed that greater IE was associated with lower SC ($\beta = -.47, p < .001$) and lower WC ($\beta = -.49, p < .001$) after adjusting for BMI and other covariates. Subscale analyses revealed that only the Unconditional Permission to Eat and Eating for Physical Rather than Emotional Reasons subscales were uniquely associated with SC ($\beta = -.30, p < .001$; $\beta = -.42, p < .001$) and WC ($\beta = -.26, p = .002$; $\beta = -.49, p < .001$). BMI was not associated with SC or WC in the model with total IE ($\beta = .03, p = .788$; $\beta = .08, p = .391$) or its subscales ($\beta = .01, p = .897$; $\beta = .07, p = .446$).

Discussion: Higher levels of IE were associated with lower levels of shape and weight concerns – independent of BMI – such that eating more intuitively was related to less preoccupation with body shape and weight. Giving oneself permission to eat ad libitum and eating based on hunger instead of emotion(s) appear to be the most important aspects of IE in this relationship. BMI was not related to shape or weight concerns. These findings suggest a person may be better able to minimize eating restrictions and to utilize hunger signals when he/she is less concerned with weight and shape, regardless of his/her actual weight status. This conclusion, however, is limited by our cross-sectional design. Future research should investigate the directionality of this relationship and its implications on mindful and disordered eating as well as on obesity development or progression.

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Paper Session 18: Insights into Disordered Eating 4:15 PM–4:30 PM

ORTHOOREXIA TRAITS ARE ASSOCIATED WITH INTERFERENCE WHEN EATING BEHAVIOR DOES NOT CONFORM TO HEALTHY EATING BELIEFS

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Background. Orthorexia nervosa (ON) is characterized by obsessions about eating healthily and rigid adherence to a perceived healthy diet. This study investigated the relationship between self-reported ON symptoms, self-reported food intake, clinical impairment, and body mass index (BMI).

Methods. ON symptoms were assessed in 451 adult participants, recruited on Amazon's Mechanical Turk, using the Eating Habits Questionnaire, which includes factors representing rigid healthy eating beliefs (RB), as well as positive affect (PA) and interference (INT) related to these behaviors. Using multiple regression, we explored the differential relationships of ON symptomatology dimensions, self-reported daily fruit/vegetable (FV) and discretionary food (snack and dessert) intake, BMI, and the Clinical Impairment Assessment (CIA), a validated measure of impairment due to disordered eating behavior.

Results. ON dimensions were highly intercorrelated; thus, z-scores were used to generate four variables representing the variance shared by the three factors and variance unique to each factor. Variance shared by the ON dimensions predicted higher FV intake ($\beta = .42$) and lower discretionary food intake ($\beta = -.22$), whereas variance unique to INT had the opposite relationship with intake of both FV ($\beta = -.11$) and discretionary food ($\beta = .27$). While RB was not related to FV or discretionary intake, it was the only ON dimension uniquely, and negatively, associated with BMI ($\beta = -.12$). A model including an interaction term of shared ON variance and discretionary food intake significantly predicted scores on the CIA, indicating that eating-related clinical impairment is associated with greater discretionary food intake in the context of more pronounced ON traits (Interaction $\beta = .14$).

Conclusions. Individuals with features of ON report rigid healthy eating beliefs and intentions, but the functional impact of ON may depend on individuals' ability to enact these beliefs. Participants who consume more "unhealthy" foods appear to report greater ON-specific and eating disorder-related impairment, whereas those who report rigid healthy eating behaviors may experience protection against weight gain. However, self-reported interference may not reflect true impairment, for example, if successfully orthorexic individuals lack insight into the social and potential health impacts of their rigid eating.

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Paper Session 18: Insights into Disordered Eating 4:30 PM-4:45 PM

DO YOU KNOW HOW MANY CALORIES YOU NEED? PREDICTORS AND CORRELATES OF CALORIC NEED AWARENESS

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Background: Despite mixed evidence regarding its effectiveness, calorie labeling on restaurant menus has become a popular public health intervention in efforts to combat the obesity epidemic in the United States. A potential weakness of this approach is that it assumes people have at least a basic knowledge of their caloric needs. However, limited research to date indicates caloric need awareness may be low. The present study explored predictors and correlates of caloric need awareness.

Method: A nationally representative sample of 501 male and female adults (53% female, mean age: 44.22 years, mean body mass index (BMI): 28.06) completed self-report measures of demographic characteristics, perceived weight status and activity level, fast food consumption, calorie intake monitoring and limiting, weight-related goals, and estimated daily calorie intake needs to maintain current weight. A participant's caloric needs estimate was considered accurate if it was within 10% of their Estimated Energy Requirement, which was calculated using a standardized formula.

Results: Females (versus males) and unmarried (versus married) participants were more likely to accurately estimate their caloric needs ($p < .01$). Participants who perceived themselves as sedentary (versus moderately or vigorously active) were more likely to estimate accurately ($p = .02$). Participants who were trying to maintain their weight (versus trying to lose weight, not doing anything regarding their weight, etc.) were most likely to estimate accurately ($p < .01$). Ability to estimate accurately did not vary based on race, ethnicity, income, education, BMI, perceived weight status, or frequency of fast food consumption. For calorie intake monitoring and limiting, a trend was observed such that participants who were neither monitoring nor limiting their intake were more likely to estimate accurately ($p = .17$). A trend was also observed for age, whereby increasing age was associated with greater likelihood of estimating accurately ($p = .13$).

Conclusions: Commonly emphasized predictors such as race, socioeconomic status-related variables, and BMI may be of limited utility in identifying target groups for education campaigns related to caloric needs. Future research should investigate the mechanisms underlying the observed relationships for factors that were associated with caloric need awareness and develop interventions to increase caloric need awareness in groups where this knowledge is particularly low.

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Paper Session 19: Addressing Trauma and PTSD 3:30 PM-3:45 PM

BRIEF, SHORT-TERM PRENATAL MENTAL HEALTH INTERVENTION FOR PTSD: A PILOT STUDY IN LOW-INCOME, MINORITY WOMEN

Sara Kornfield, PhD¹, Brendan McGeehan, M.S. Statistics², Stephanie Criniti, M.S.², C. Neill Epperson, MD³

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Introduction: It is estimated that more than half of women will experience a traumatic event in their lifetime, with rates as high as 86% among African-American, urban-dwelling women. Women are twice as likely as men to meet diagnostic criteria for PTSD, and over four times as likely to experience chronic PTSD. It is therefore not surprising that many women struggle with PTSD or subthreshold trauma related symptoms during pregnancy. Studies have shown rates of PTSD are higher in pregnant compared to non-pregnant women. Stress hormone regulation necessary for appropriate development of the fetus and timing of parturition may be disrupted by heightened maternal physiological arousal which is a hallmark symptom of PTSD. Though PTSD during pregnancy has been associated with sub-optimal birth outcomes, pregnant women with subthreshold or even full PTSD may not seek out treatment due to cultural/environmental norms, or simply the inconvenience of attending another appointment given the burden of prenatal care. Therefore, this study aimed to test the effectiveness of a brief, short term psychological intervention for trauma related symptoms which could be delivered in tandem with prenatal care to women who were symptomatic yet non-treatment seeking.

Method: Pregnant women were recruited from the waiting room of an urban prenatal clinic. After evaluation and screening for PTSD symptoms, those who met inclusion criteria (PCL score > 40) were invited to participate in a brief, 4-session treatment within the context of a larger study. The 4 sessions focused on psychoeducation, behavioral activation to address avoidance, and mindfulness training. Participants completed the PCL-C, EPDS, and PSS at Baseline, session 2, session 4, Post-treatment Follow-up, and Postpartum Follow-up (10–14 weeks post-partum).

Results: Twelve (12) pregnant women completed the treatment and follow-up sessions. Linear modeling was used. Overall, self-reported scores showed a significant decrease from Baseline to Post-treatment Follow-up, on the PCL-C ($\beta = -4.708$, $SE = .580$, $p = 2.18e-9$), EPDS ($\beta = -1.0093$, $SE = .2844$, $p = 1.38e-09$), and PSS ($\beta = -1.0817$, $SE = .2861$, $p = 1.4e-09$). These improvements were maintained at the 10–14 week postpartum follow-up assessment.

Discussion: Brief, short term psychotherapy targeting avoidance and arousal in pregnant women with PTSD is effective in decreasing symptoms of both PTSD and depression. Gains were maintained into the postpartum which is significant as many women with mental health disorders during pregnancy are at higher risk for worsening in the postpartum.

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Paper Session 19: Addressing Trauma and PTSD 4:00 PM-4:15 PM

RESISTANCE TRAINING REDUCES ANXIETY IN INDIVIDUALS WITH POSTTRAUMATIC STRESS DISORDER

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Background: Individuals with posttraumatic stress disorder (PTSD) frequently experience comorbid symptoms of anxiety and depression. Research has shown that these symptoms can poorly affect and exacerbate PTSD. Despite the well-known positive effects of exercise on anxiety and depression, few studies have examined how it can impact the anxiety and depression faced by individuals with PTSD. Additionally, no study has explored the potential benefits of resistance training (RT; i.e., weight lifting) on anxiety and depression in this population.

Purpose: This pilot study tested the effects of RT on anxiety and depression among a community sample of individuals with PTSD.

Method: 22 adults (ages 19–62, mean=33.0 ± 13.3; 81.1% female) who screened positive for PTSD, using the Posttraumatic Diagnostic Scale for DSM-5 (PDS-5; cutoff score ≥28), were randomly assigned to 3 sessions/week of RT for 3 weeks (n=11) or a time-matched, attention Control (n=11). Anxiety and depression were assessed using the State-Trait Anxiety Inventory and the Center for Epidemiologic Studies Depression Scale, respectively. Nineteen participants completed baseline and follow-up assessments (RT=9, Control=10). Differences in anxiety and depression were assessed using repeated-measures ANOVA, and effect sizes were calculated using Cohen's *d*.

Results: There were no significant group differences at baseline. At follow-up, there was a significant main effect of group for anxiety ($F=5.3$, $p=0.03$). Additionally, there was a significant group X time interaction for anxiety ($F=6.8$, $p=0.02$), such that the RT group significantly improved from baseline to follow-up (pre 54.7 ± 11.5 vs. post 46.2 ± 12.6) relative to the Control (pre 48.3 ± 11.8 vs. post 48.8 ± 13.8). Effect size calculations showed that RT had a larger beneficial effect on anxiety relative to the Control ($d=-0.70$ vs. 0.04). There were no significant differences between RT and the Control for depression ($p>0.05$). However, the effect size for RT and the Control on depression were $d=-0.59$ and $d=0.06$ respectively.

Conclusion: These findings suggest that 3 weeks of RT can help reduce anxiety in individuals who screen positive for PTSD. The lack of a significant effect of RT on depression was unexpected. However, these findings may be explained by the small sample size. Thus, additional adequately powered studies testing the effects of RT on anxiety and depression in those with PTSD are needed.

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CITATION AWARD WINNER

Paper Session 19: Addressing Trauma and PTSD 4:15 PM-4:30 PM

UNDERSTANDING HISTORICAL TRAUMA AMONG INDIGENOUS ADULTS AT RISK FOR DIABETES TO INFORM BEHAVIORAL INTERVENTIONS

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Introduction: Culturally-specific behavioral interventions to address chronic conditions like diabetes among indigenous groups in the US, such as American Indian/Alaska Natives, are urgently needed. To develop effective interventions, the historical experiences of indigenous communities must be considered. Specifically, historical trauma—the transgenerational experience of group-wide trauma that manifests as emotional and psychological suffering—is critical given its impact on mental and physical health. However, little is known about historical trauma and associated symptoms among indigenous adults at risk for chronic disease.

Methods: Information on historical trauma was gathered using the Historical Loss (HL) and Historical Loss Associated Symptoms (HLAS) scales from 207 indigenous adults in California at risk for diabetes. We used separate HL scales for those with ancestry from the US/Canada and for those with ancestry from Mexico/Central/South America to reflect differences in historical traumatic experiences. Wilcoxon-Rank-Sum and Kruskal-Wallis tests were used to evaluate relationships between participant characteristics and HL and HLAS scores.

Results: Participants had a mean age of 52 (SD=13.3), a mean Body Mass Index of 37 (SD=6.1) and were primarily female (79%). Participants were indigenous to the US/Canada (57%) and Mexico/Central/South America (34%). Among participants with ancestry from the US/Canada, 49% thought about at least one historical loss, such as “the effects of loss of land on our people,” weekly, daily, or several times a day. Among participants with Mexican/Central/South American ancestry, 32% thought about at least one historical loss weekly, daily, or several times a day. Among all participants, 62% reported experiencing associated symptoms sometimes, often, or always. Indigenous ancestry from the U.S. or Canada ($p<.001$), depression ($p<.001$), and greater participation in cultural ($p<.001$) and spiritual ($p=.003$) activities were positively associated with HL scores. The same characteristics were positively associated with HLAS scores. Food insecurity was positively associated with HLAS scores ($p=0.003$).

Conclusion: Indigenous adults from the US and Canada who participated more frequently in culturally-relevant activities had higher HL and HLAS scores than their peers. Partnering with indigenous communities to identify and incorporate culturally-specific strategies into behavioral interventions has the greatest potential for effectiveness.

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Paper Session 19: Addressing Trauma and PTSD 4:30 PM-4:45 PM

TRAUMA-INFORMED PRIMARY CARE PSYCHOLOGY: PREVALENCE OF SELF-REPORTED TRAUMA AND ITS RELATIONSHIP TO ANXIETY AND DEPRESSION

Sarah Griffin, MS, Allison B. Williams, M.S., Samantha Mladen, B.S., Sarah Braun, M.S., Bruce Rybarczyk, PhD

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Introduction: Primary care is a critical access point for screening and treatment of depression and anxiety, particularly for low-income patients. Given the high prevalence of trauma exposure (and its mental/physical health sequelae), universal screening for trauma is recommended for primary care. However, in practice, clinicians often rely on patients to self-report trauma. To date, little research has investigated how frequently patients self-identify trauma as a problem area or how self-identified trauma influences common mood disorders and their treatment trajectories. Using a sample of low-income, primary care patients the present study aims to: 1) define prevalence of patients self-identifying trauma as a problem area, 2) analyze the effect that self-identified trauma has on depression/anxiety treatment at baseline and on the frequency of follow-up sessions, and 3) review other factors that may influence the relationship between depression/anxiety and trauma.

Methods: Data from patients ($n=927$; 31% male, 69% female; 32% White, 48% Black, 20% Other) who received primary care psychology services from 2012–2017 were analyzed using linear and logistic regressions. Patients self-reported trauma as a problem area and depression and anxiety were assessed with the PHQ-9 and GAD-7 respectively. Patients were categorized as white or of color for analyses due to sample size constraints.

Results: A total of 50 patients (7.5%) self-identified trauma as a problem area. Patient-identified trauma was associated with higher depressive symptoms ($b = 3.58$, $t(1) = 2.71$, $p < .01$) and more follow-up visits ($b = .86$, $t(1) = 2.23$, $p < .05$) when controlling for race, gender, and age. Patient-identified trauma was not a significant predictor of anxiety symptoms ($ps > .05$). Patients with self-reported trauma tended to be younger ($M = 40.39$) than participants who did not report trauma ($M = 46.85$; $\chi^2(1)=8.0$, $p < .01$); there were no significant differences due to race (white v people of color; $p = .57$) or gender ($p = .32$).

Conclusion: The prevalence rate of self-identified trauma was substantially lower than in studies with universal screening of trauma, suggesting that patients under-report trauma independently. Trauma was also shown to be associated with increased baseline depressive symptoms and increased follow-up visits. The present study's findings underscore the importance of systematic trauma screening and trauma-informed treatment in primary care.

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Paper Session 20: Promoting the Health of Sexual and Gender Minorities 3:30 PM-3:45 PM

VALIDATING THE SYNDemic THREAT SURROUNDING SEXUAL MINORITY MEN'S HEALTH IN A POPULATION-BASED STUDY

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Background: Accumulating research on the syndemic health threats facing sexual minority men suggests that the vastly elevated risk of HIV among this population co-occurs with other health disparities, such as poor mental health and substance abuse. Identifying syndemic correlates of HIV infection among sexual minority men can spur the development of comprehensive interventions targeting these co-occurring vulnerabilities. Yet previous investigations into sexual minority men's syndemic health threats are limited in that they 1) rely on non-representative sampling, therefore potentially biased by self-selection, 2) rely on self-reported exposures, potentially conflated with disease outcome, 3) do not include a heterosexual comparison, thereby precluding comparison of disease comorbidity – a central tenet of syndemic theory, and 4) only assess sexual minority status as a function of behavior (i.e., MSM), rather than identity (e.g., gay, bisexual), which is more susceptible to the minority stress factors hypothesized to ultimately drive the syndemic threats facing this population.

Purpose: To conduct the first population-based examination of clinically assessed syndemic predictors of HIV infection among gay/bisexual, compared to heterosexual, men.

Method: The sample was comprised of adult males in the Stockholm Public Health Cohort 2010. In the cohort, a total of 29,328 (91.9%) self-identified as heterosexual, 535 (1.7%) as gay, and 396 (1.2%) as bisexual. We linked survey responses to health registry data.

Results: Gay men had vastly elevated risk of HIV infection (>150 times) compared to heterosexuals. Gay men also had an elevated risk of all psychosocial syndemic conditions (i.e., depression, substance abuse, lifetime suicide, and assaults) compared to heterosexuals. Bisexual men had 16 times higher risk of being HIV-positive than heterosexual men. Number of psychosocial syndemic conditions was significantly associated with HIV infection among gay men (adjusted odds ratio [AOR] = 1.51; 95% confidence interval [95% CI]: 1.03, 2.22), but not among bisexual and heterosexual men (AOR = 0.72; 95% CI: 0.12, 4.24; AOR = 1.57; 95% CI: 0.64, 3.86).

Conclusions: In the first study to investigate syndemic production using population-based sampling, clinically-derived disease indicators, and self-identified sexual orientation, results suggest that gay-identified men are significantly more likely to be diagnosed with HIV, and to experience co-occurring psychosocial conditions, than heterosexual or bisexually-identified men. This study confirms emerging research evidence for the existence of syndemic health threats affecting sexual minority men, finds stronger evidence for syndemics among gay compared to bisexual men, and suggests the need for HIV-prevention interventions that comprehensively address the co-occurring disparities affecting this group.

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Paper Session 20: Promoting the Health of Sexual and Gender Minorities 3:45 PM–4:00 PM

ENGAGING SEXUAL AND GENDER MINORITIES IN IDENTIFYING STRATEGIES TO INCREASE PREP UPTAKE AND ADHERENCE IN THE MID-SOUTH

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Background: Increasing access to HIV prevention services and the promotion, uptake, and adherence of pre-exposure prophylaxis (PrEP) is paramount to ending the epidemic of HIV in the Mid-South among sexual and gender minority youth and young adults. The purpose of this qualitative pilot study was to explore strategies needed for and barriers to PrEP uptake and adherence among members of populations experiencing HIV disparities.

Method: Sexual and gender minority youth and young adults (n=20) at least 15 years of age from the Memphis, TN metropolitan area participated in 3 focus group discussions using a semi-structured discussion guide. Topics included motivations, barriers, and facilitators to PrEP use; sexual decision-making; and PrEP delivery personnel. Each focus group was audio recorded, transcribed verbatim, and session transcripts were analyzed using theme analysis strategies.

Findings: The majority of participants self-identified as HIV-negative (100%), Black/African American (95%), men who have sex with men (95%), and currently prescribed PrEP (80%). Emerging themes identified by participants to increase uptake and adherence included involvement of primary sexual partner, trusted and relatable healthcare provider (e.g., HBCU trained, LGBTQ), and use of social media for PrEP awareness. Addressing PrEP-related stigma, mislabeling of PrEP as promiscuity promoting, and limitations with PrEP marketing (e.g., solely LGBTQ) were recognized as barriers and perpetuating stigma.

Conclusions: These results will benefit community-academic research partnerships in efforts to improve strategies used by state and local health departments to increase PrEP uptake and adherence. Our data suggest extending PrEP awareness and training to medical providers matriculating at HBCUs; working closely with couples; and crafting PrEP messaging for broader audiences. Findings may inform the development of public health interventions for sexual and gender minority youth and young adults and help facilitate HIV prevention efforts to other groups disproportionately affected by HIV in the Mid-South.

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Paper Session 20: Promoting the Health of Sexual and Gender Minorities 4:00 PM–4:15 PM

HOUSING INSECURITY AND HOMELESSNESS AMONG GENDER MINORITIES

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Background: Housing is well understood to be an important social determinant of physical and mental health and well-being. Gender minorities are more likely to experience homelessness and housing discrimination than their cisgender counterparts. Housing insecurity, not just homelessness, is associated with barriers to health care and increased use of acute-care services. This study explores homelessness and housing insecurity among gender minority individuals.

Methods: Utilizing targeted ethnography, we conducted 41 semi-structured key-informant interviews with gender minority individuals throughout the USA. Interviews queried life stressors, particularly around homelessness and housing insecurity, and included personal experiences and community accounts, connections to other aspects of life, and coping strategies. Interviews were audio recorded and transcribed. Data was coded and analyzed for key themes using NVIVO 11.

Results: Respondents discussed an array of housing challenges throughout the gender minority community. About half of respondents reported personal stories; the others frequently shared peer accounts. Overwhelmingly, financial barriers were discussed regarding accessing secure housing, though family rejection and gender-related housing discrimination were discussed. Financial barriers focused on pervasive discrimination, which limited access to stable employment. Discrimination stories increased whenever the respondent was non-white, or trans-feminine, leading to even more financial barriers and insecure housing for these populations. Housing insecurity was linked to hygiene and health challenges, overall stress, and trouble maintaining work. Respondents discussed social support and alternative family structures as coping resources, as well as substance use.

Conclusions: Nearly all respondents discussed housing challenges as an issue in the gender minority community, and its link to other social wellbeing indicators, such as race based discrimination and maintaining employment, which then further destabilizes housing security. The study supports increased resources towards gender minority housing access and interventions into the cyclical discrimination, housing, and employment issues this population faces.

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Paper Session 20: Promoting the Health of Sexual and Gender Minorities

4:15 PM-4:30 PM

EXAMINING A BEHAVIORAL MODEL OF HEALTHCARE DELAY AMONG TRANSGENDER AND GENDER-NONCONFORMING ADULTS IN THE UNITED STATES

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Transgender and gender-nonconforming (TGNC) individuals have reported increased mental, behavioral, and physical health needs, as well as unique barriers to healthcare, largely due to stigma. TGNC individuals have also reported being denied medical care and postponing seeking care due to fear of discrimination, which may increase complications and severity of illness, and result in increased hospitalizations and healthcare costs. The current study examined robust associations among stigma-related stressors (i.e., vicimization and discrimination), personal and physician-related enabling factors, health needs, and past-year healthcare delay among an online convenience sample of 109 TGNC adults in the United States. A series of simple mediation models and serial mediation models were run using the Hayes Process Macro for SPSS to examine the indirect associations with delay as the outcome. Victimization and discrimination were significantly associated with delay through mental health ($ps < .05$). Also, victimization ($b = .24, p < .05$) and discrimination ($b = .32, p < .05$) were indirectly associated with delay through a cascade of indirect effects: TGNC-inclusive care → negative expectations → mental health → perceived behavioral control → delay. Lacking a TGNC-inclusive provider may exacerbate the effects of stigma on internalization, such as negative expectations about the future or fear of rejection, and worse mental health. These findings highlight the need for TGNC-friendly healthcare providers, which may serve as a buffer between exposure to victimization/discrimination and subsequent HCU delay. Internalization of stigma and resultant mental health problems may diminish perceived behavioral control through a cycle of social avoidance and isolation, resulting in avoidance of healthcare when needed. These findings highlight the need to address both TGNC individuals' timely use of care, and the quality of care they receive. It is imperative that future research takes a multi-level approach by creating and testing evidence-based interventions to improve both healthcare providers' competency, as well as for TGNC individuals' ability to coping with stressors.

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Paper Session 20: Promoting the Health of Sexual and Gender Minorities

4:30 PM-4:45 PM

INCORPORATING PATIENT-LEVEL PREFERENCES OF SEXUAL MINORITY MEN INTO PATIENT-PROVIDER INTERACTIONS ABOUT HIV PREVENTION

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The objective of this study was to identify behaviors of healthcare providers that sexual minority men deemed to be helpful and unhelpful regarding HIV prevention. This is important because significant health disparities exist between sexual minority (e.g., gay, bisexual) and heterosexual men, especially regarding HIV infection. One factor that may contribute to health disparities is poor patient-provider interactions, which can lead to patient disengagement in healthcare. Although some work has been done on patient-provider interactions with marginalized groups, no patient-provider interaction models have been tailored for sexual minority men and HIV prevention. Providers are left without clear guidelines on what constitutes helpful or unhelpful behaviors regarding promoting HIV prevention behaviors among sexual minority male patients.

We recruited a sample of 20 HIV-negative sexual minority men who endorsed at least one psychosocial HIV risk factor (e.g., mental health problems, childhood sexual abuse) from online venues in the U.S. (e.g. listservs, social groups). We conducted individual interviews using the audio call feature of Skype. Among our sample, 55% identified as White and 65% reported annual incomes less than \$39,999 (Mean age = 28.45, SD = 7.68). A coding team of four coders used a type of qualitative analysis known as conventional content analysis and double checked results for accuracy through participant follow-up interviews.

Findings suggested that, from the perspective of sexual minority male patients, some providers are knowledgeable about sexual minority health and HIV prevention and yet, continue to contribute to poor patient-provider interactions (e.g., stereotyping patients, judgmental behaviors about sex). Also, some providers are knowledgeable and tailor treatment accordingly (the preferred interaction). Preferred interactions with sexual minority men regarding HIV prevention involved: providers (a) knowing about and being comfortable talking about sexual health, (b) knowing some information about sexual minority people and employing it routinely in practice (e.g., gay or bisexual health brochures, inclusive intake forms), (c) maintaining confidentiality, (d) creating comprehensive treatment plans, (e) providing education about treatment plans, and (f) providing care that is affordable and easy to access, and (g) treating psychosocial HIV risk factors (e.g., mental health problems), that indirectly helped participants remain HIV-negative. By integrating these findings with existing literature on patient-provider interactions for sexual minority people, we will present a preliminary model of patient-provider interactions that reflects preferences of sexual minority men regarding HIV prevention.

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Paper Session 21: Understanding and Addressing Alcohol Use 3:30 PM-3:45 PM

THE EFFECTIVENESS OF UNIVERSAL, SELECTIVE AND COMBINED PREVENTION FOR ALCOHOL USE: RESULTS FROM A CLUSTER RCT.

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Background: Alcohol use and associated harms are among the leading causes of burden of disease among young people, highlighting the need for effective prevention. The Climate and Preventure (CAP) study was the first trial of a comprehensive approach to alcohol use prevention which combined a universal intervention (delivered to an entire school year group) with a personality-targeted selective intervention (delivered to high-risk students only).

Method: A cluster randomized controlled trial was conducted between 2012–2015 with 2190 students (mean age: 13.3yrs) from 26 Australian high schools. Participants were randomized to receive one of four conditions; universal prevention for all students (Climate); selective prevention for high-risk students (Preventure); combined universal and selective prevention (Climate and Preventure; CAP); or health education as usual (Control). All students were followed up for 3 years post-baseline and a longer-term follow is currently underway. This longer-term follow-up will extend over a critical risk-period as students transition from school to early adulthood, spanning 7 years post baseline and assessing drinking, drug use, and other risk behaviours.

Results: Analyses up to 3-years post baseline demonstrate the effectiveness of universal, selective and combined approaches in preventing harmful alcohol use among both low- and high-risk adolescents, as well as reducing mental health symptoms in the high-risk students. Compared to control group, effect sizes for the universal, selective and combined interventions ranged from $d = -0.21$ to $d = -0.56$ ($p < 0.05$), and Number Needed to Treat (NNT) values ranged from 6 to 12. These compare extremely favourably to other alcohol prevention programs. These results will be presented along with the study protocol of the long-term follow-up.

Conclusion: Results support the effectiveness of universal, selective and combined approaches to alcohol prevention up to 3 years post baseline. As very little is currently known about the effectiveness of school-based prevention programs beyond age 17, the longer-term follow-up of the CAP study which is underway will address a crucial knowledge gap. We hope the findings will indicate which prevention approaches are most sustainable long-term, vital information to inform policy nationally and internationally, as economic modelling suggests substantial societal benefit can be gained from even modest reductions in alcohol use.

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Paper Session 21: Understanding and Addressing Alcohol Use 3:45 PM-4:00 PM

POSITIVE CHOICES: ADDRESSING THE EVIDENCE-PRACTICE GAP IN ALCOHOL AND OTHER DRUG PREVENTION

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Background. Onset of alcohol and other drug use typically occurs during adolescence; thus preventative initiatives need to occur early on, prior to exposure. Schools are an ideal place to implement harm prevention strategies, with the potential for broad-ranging impact and tailoring of messages to suit students' developmental level. In parallel, parents require guidance about how they can protect against harms associated with drug use. There is increasing evidence that the risk of alcohol and other drug harms among teenagers can be reduced substantially with the right prevention strategies. Despite this, evidence-based drug prevention approaches are not widely implemented.

Objectives. The Positive Choices project aims to address a known evidence-practice gap in the implementation of alcohol and other drug prevention approaches.

Method. The Positive Choices portal was developed to provide a central resource where school staff, young people and their parents could easily access evidence-based drug information and prevention strategies. The portal was developed in consultation with drug and alcohol experts, as well as target users in Australia. Research literature and drug education websites were systematically reviewed to identify resources meeting pre-specified inclusion criteria for relevance and evidence quality. A post-launch evaluation was conducted, guided by the Reach, Effectiveness, Adoption, Implementation and Maintenance (RE-AIM) model, with school staff ($n=107$) and parents ($n=50$) post-launch to assess the success of the initiative and determine progress towards evidence-based practice.

Results. In the two years since launch, the Positive Choices portal and accompanying webinar series have been accessed by over 85,000 users across Australia and internationally. Evaluation feedback from teachers and parents indicated that the games, videos and factsheets were the most accessed drug prevention resources on the site. Eighty four percent of respondents said they would continue to use the portal, and 89% said they would recommend Positive Choices to a friend or colleague. There was evidence that use of the portal changed respondents attitudes and intentions to implement evidence-based prevention strategies.

Conclusion: This study represents the first implementation and evaluation of a national drug prevention initiative in Australia. Findings suggest *Positive Choices* has achieved broad reach, and increased awareness and future intentions to implement evidence-based prevention strategies.

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Paper Session 21: Understanding and Addressing Alcohol Use 4:00 PM-4:15 PM

THE 'REIGN OF ERROR' IN ADOLESCENTS' PERCEPTIONS OF PEER DRINKING NORMS IN US SECONDARY SCHOOLS

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Past work on social norms and alcohol use among college students has found pervasive overestimations of peer drinking norms and that the frequency and quantity a student believes peers to drink predicts personal consumption. Few studies have examined whether similar phenomena are found among middle school and high school students. Yet, students' perceptions of peer norms within the school context may be an important determinant of adolescent alcohol use as youth look to peers for social cues on what to believe and how to behave during an important development period. This study distinguishes between perceived and actual peer norms for alcohol use among 27,545 students in grades 6–12 across 63 schools in 11 states from 1999 to 2014. Data were collected via anonymous online surveys on students' perceptions of the most common drinking behaviors among same-grade same-school peers as well as data on personal drinking behaviors, which determined actual norms. Within 83% of grade-school cohorts (179 out of 216), the majority of students rarely consumed alcohol (never or only 1-2x per year). This peer norm of abstinence/rare use was misperceived, however, by two-thirds of the students in these grade cohorts who thought that their peers typically consumed alcohol more frequently. Further, one-third of students in these cohorts erroneously believed most peers drank weekly or more often. In the other 37 cohorts where monthly alcohol use was the actual norm, overestimations of this peer norm were equally pervasive. Overall 83% of students believed consumption to be more frequent than the actual cohort norm. Other measures of consumption demonstrated similar disparities between actual and perceived norms across all cohorts. Misperceptions were pervasive across racial groups, school socio-economic status, size of grade-school cohort, and time periods within this study. Misperceiving frequent drinking as the norm and misperceiving drinking large quantities as the norm among cohort peers strongly predicted personal drinking. Perceptions of the norm were a stronger predictor of personal behavior compared to several other individual and school-level factors, including actual peer norms. Researchers should design experiments to assess causal direction while also testing interventions to reduce misperceptions, and presumably reduce actual alcohol use. Practitioners could begin to explore comprehensive ways to promote the awareness of positive actual norms among students.

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Paper Session 21: Understanding and Addressing Alcohol Use 4:15 PM-4:30 PM

ETHNIC DIFFERENCES IN THE RELATIONSHIP BETWEEN CHILDHOOD ADVERSITY AND SUBSTANCE USE AMONG UNDERGRADUATE COLLEGE STUDENTS

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Introduction: Despite evidence that suggests college students have high rates of substance use and misuse and a high prevalence of adverse childhood experiences (ACE), whether ACE related substance use patterns vary across ethnic groups remains unknown. However, the increasing size and diversity of college populations calls for research that can determine if ACE-related substance use behaviors are similar or different across ethnic groups and whether college communities would benefit from the development of culturally-informed prevention services for at-risk students. The present study, using an ethnically diverse sample of undergraduates from two states, examined the prevalence of ACE exposure; marijuana, tobacco, and alcohol use; and if the association between individual and accumulated ACE and substance use varied across ethnic background.

Methods: Data are student responses (N=7,184) on a standardized college health surveillance instrument administered in 2016 in west-coast and mid-west colleges. A series of multivariable logistic regression models assessed the direct associations between individual ACE and substance use (adjusting for age, gender, state, depressive symptoms), and the graded effects of ACE for substance across non-Hispanic White, Hispanic, African American, African, Asian/Pacific Islander, and multiracial students.

Results: Across the two states, 22% of students reported using marijuana, 29% had smoked tobacco, 75% had used alcohol, and 30% acknowledged binge drinking. There were significant differences in the prevalence of substance use and ACE across ethnic groups ($p < 0.01$) and in the strength and significance of the graded relationship between ACE and use of each substance. The increase in odds of substance use associated with every additional ACE reported by students was especially pronounced among ethnic minority students (OR range 1.21 - 2.51, $p < .001$).

Conclusions: Our results, using data from a large cross section of college students, comport with preliminary studies suggesting that many students may be using substances to cope with ACE related distress. The variability in ACE related substance use patterns across ethnic groups highlights the need for research that can advance our understanding of how ethnicity and culture influence trauma response and the role of campus communities in the development of culturally informed prevention services.

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Paper Session 21: Understanding and Addressing Alcohol Use 4:30 PM-4:45 PM

ANXIETY, DRINKING TO COPE, AND THE TRANSITION TO HIGH RISK ALCOHOL USE IN EARLY ADULTHOOD

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Background. Anxiety and alcohol use disorders commonly co-occur, and if left untreated, can fuel each other in a feed-forward cycle. The transition from adolescence to adulthood is a key risk period for onset of both disorders, yet little is known about the developmental unfolding of these disorders over young adulthood, or how best to prevent their escalation.

Aims. This research aims to i) examine the relationship between anxiety, coping-motivated drinking and transition to hazardous alcohol use over this important developmental period; and ii) inform the development of an early intervention for young adults to prevent the escalation of anxiety and alcohol use problems.

Methods: At ages 17 and 21, participants (n = 2,148) from a UK birth cohort reported their alcohol use and related problems, anxiety symptoms, and use of alcohol to cope with emotional symptoms. Latent transition analysis was used to identify alcohol use subtypes at each timepoint, and examine the effect of anxiety and coping motives on transition from low- to high-risk use over this period.

Results: Three distinct profiles were identified. At age 17, the majority of participants were classified as “low-risk” drinkers, with a smaller “binge” class (22%) reporting binge-drinking at least monthly. By age 21, the binge-drinking group had grown to 36% and a third “high-risk” class (8%) emerged, showing markedly increased rates of alcohol-related harm. Anxiety disorder and drinking to cope were associated with higher risk alcohol use at both waves. Young people who reported coping-motivated drinking were at increased risk of moving from low-risk to high-risk alcohol use over the transition to adulthood. A one standard deviation increase in drinking to cope at age 17 was associated with a doubling of the odds of transitioning from a low-risk to high-risk state (OR = 2.01, 95% CI=[1.51, 2.69]) and increased risk of moving from a low-risk to bingeing state (OR = 1.42, 95% CI=[1.16, 1.74]).

Implications: Anxiety, and in particular drinking to cope with anxiety, is associated with adverse drinking patterns in early adulthood. Results will be discussed with a focus on implications for development of a novel youth-focused intervention, the “inroads” program, to address harmful alcohol use occurring in the context of anxiety symptoms.

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Paper Session 22: Innovations in Supporting the Healthy Veterans 3:30 PM-3:45 PM

PROMOTING PARTICIPATION: OUTCOMES INDICATIVE OF A QUALITY PHYSICAL ACTIVITY EXPERIENCE FOR VETERANS WITH A DISABILITY

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Background: Individuals with disabilities have a basic right to full participation in society – a right not currently experienced in physical activity (PA). One main knowledge gap in promoting full PA participation is a comprehensive understanding of the concept of quality participation. As a result, researchers are currently aiming to develop a model of quality PA participation by identifying the components of quality participation. To date, while the precursors and elements of quality participation have been identified, the outcomes indicative of a quality participation experience remain undefined.

Purpose: The current study aimed to fill this gap by determining what outcomes are indicative of a quality PA experience within a specific population: military veterans with a physical disability. PA programs have proliferated internationally as a way of supporting veterans post-injury. Unfortunately, there is no evidence to support optimal program development and delivery or program evaluation. Understanding the outcomes that veterans desire from quality PA experiences is key to building this evidence base and, thus, improving programs and participant experiences.

Methods: Eighteen veterans (15 men, 3 women) with a physical disability (e.g. amputation, spinal cord injury) who participate in PA programming (e.g. sport, therapeutic recreation, physical challenges) took part in semi-structured interviews. An inductive thematic analysis was conducted to identify patterns indicative of quality outcomes.

Results: Four overarching themes were identified: (1) Physical health and fitness outcomes (i.e. achieving and maintaining optimal physical health); (2) Psychological outcomes (i.e. mental healing, a sense of accomplishment, enjoyment, and a boost in mood state); (3) Social outcomes (i.e. building a social network, protecting against stigma, and having a prosocial influence); and (4) Life opportunities (i.e. new avenues including employment, and certifications).

Discussion: The first three overarching themes have previously been identified in the literature. However, the value of the findings lies in the unique sub-themes, which identify specific outcomes which veterans with a disability link to quality experiences. The results are also beneficial in identifying novel outcomes which have not been previously explored, including stigma, prosocial behaviours, and opportunities that emerge beyond PA.

Conclusion: This research contributes to the development of a model of quality PA participation for individuals with disabilities – particularly veterans. Through these contributions, researchers can support PA program staff by providing evidence as to how programs can provide quality experiences, and ultimately promote the basic human right to full participation in society.

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Paper Session 22: Innovations in Supporting the Healthy Veterans 3:45 PM-4:00 PM

PREDICTORS OF INFORMATION SHARING IN A MILITARY MENTAL HEALTH STIGMA REDUCTION INTERVENTION

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Background: Military service members face increased risks for mental health issues. Because mental health stigma is associated with adverse mental health outcomes, it is critical to develop interventions that reduce stigma and increase support-seeking behavior. Research suggests stigma can be reduced through media campaigns and by encouraging individuals to talk about mental health; however, it is unknown if individuals who view stigma reduction materials will talk to others about what they learn. The objective of this study was to examine predictors of health information sharing among service members participating in a stigma reduction intervention.

Methods: Participants included 85 Marines (87.1% male; age =25.4; SD=6.7) who completed one of two interventions. Both study groups viewed a 35-minute video designed to demystify mental health treatment by describing various aspects of treatment (e.g., types of providers and treatments, parameters of confidentiality). One study group also engaged in a 15-minute in-person discussion about the video with a clinical psychologist. Participants completed a self-report questionnaire at baseline, immediately following the intervention, and 6 weeks later. Demographic and military service characteristics, mental health symptoms, and stigma toward mental health treatment seeking were assessed at baseline, the immediate follow-up survey assessed video ratings and reassessed stigma; information sharing (yes/no) was assessed at the 6-week follow-up.

Results: After 6 weeks, 61.4% of participants had shared what they learned from the video with at least one person. Bivariate analyses revealed several predictors of information sharing, including female sex, higher rating of the video, lower stigma, and participation in the discussion. A multivariable model including all variables significant at the univariate level showed women (OR=18.7, $p=0.05$).

Discussion: Engaging participants in active discussions regarding mental health treatment may increase the likelihood thereby increasing the reach of the message and potentially reducing stigma. Future stigma interventions should incorporate active discussions and explore methods for increasing information sharing among men.

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Paper Session 22: Innovations in Supporting the Healthy Veterans 4:00 PM-4:15 PM

EFFECTS OF SOCIAL SUPPORT DURING AND AFTER DEPLOYMENT ON HAZARDOUS ALCOHOL USE AMONG ARMY RESERVE AND NATIONAL GUARD COUPLES

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Background: Research suggests that interpersonal support is beneficial to military personnel and families in curbing deployment-related mental health issues. However, there is limited research examining the deployment timeline and crucial periods where support might be more protective against negative outcomes. This research examines the effects of support during and after deployment on hazardous alcohol use by both military personnel and civilian partners.

Methods: Data are from the baseline assessment of Operation: SAFETY (Soldiers And Families Excelling Through the Years), an ongoing longitudinal study of Army Reserve and National Guard soldiers and their partners. Logistic models examined relationships between current hazardous alcohol use (AUDIT ≥ 8) and experiences of social support both during and after most recent deployment (DRRI score and average closeness to past-year social ties, respectively). Separate models are examined for 248 male soldiers who have been deployed and 130 female civilians whose current partner had been deployed during their relationship. Models controlled for partner's alcohol use and combat exposure severity during deployment.

Findings: For male soldiers, higher DRRI scores are associated with lower unadjusted odds of hazardous alcohol use (OR=0.94 [0.91–0.98], $p=0.004$), while the unadjusted relationship for average closeness and alcohol use is non-significant. When simultaneously assessing the effects of both support types, higher DRRI scores continue to be inversely related to alcohol use (OR=0.94 [0.90–0.98], $p=0.003$), and average closeness is non-significant.

For female partners, as with male soldiers, the unadjusted likelihood of current hazardous alcohol use is inversely related to higher DRRI scores (OR=0.95 [0.90–1.00], $p=0.033$), and alcohol use is not related to average closeness. However, when assessing the two types of support together, findings now show a significant inverse relationship between average closeness and likelihood of hazardous alcohol use (OR=0.25 [0.10–0.65], $p=0.005$), with DRRI no longer being significant.

Conclusions: Support during deployment may be protective for male soldiers, whereas higher levels of closeness with social ties post-deployment may be protective for female partners. These findings have implications for timing and strategy when providing or supplementing deployment support to curb negative health outcomes. Future efforts should focus on the role of support in marital partnerships with female soldiers.

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Paper Session 22: Innovations in Supporting the Healthy Veterans 4:15 PM-4:30 PM

IS SOCIAL MEDIA A VENUE FOR HELP-SEEKING AMONG MILITARY VETERANS WITH MENTAL HEALTH PROBLEMS?

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Background: The media has devoted significant attention to anecdotes of military veterans and other individuals who post messages on Facebook prior to suicide. However, it is unclear to what extent social media is perceived as a source of help, or how it compares to other sources of potential support for mental health problems.

Methods: This was a cross-sectional study of 270 adult military veterans with probable major depression. Help-seeking intentions were measured with a modified General Help-Seeking Questionnaire, with choices ranging from 1 (“Extremely unlikely”) to 7 (“Extremely likely”). Facebook users and non-users were compared via t-tests, chi-square tests, and mixed effects regression models. Associations between types of help-seeking among Facebook users were examined using mixed effects models.

Results: The majority of participants were users of social media, primarily Facebook (n=162). 76% (n=206) endorsed having at least one source of help they intended to use if having suicidal thoughts. Mean help-seeking intentions for each included help source were similar between Facebook users and non-users, even after adjustment for potential confounders. Facebook users were very unlikely to turn to Facebook as a venue for support when experiencing either an emotional problem (mean score 1.67) or suicidal thoughts (mean score 1.41). Compared to help-seeking through Facebook, they had significantly higher help-seeking intentions for formal sources such as psychologists (mean scores 4.42 for emotional problem, 4.16 for suicidal thoughts; $p < .001$), informal sources such as friends (mean scores 3.69 for emotional problem, 3.18 for suicidal thoughts; $p < .001$), and phone help lines (mean scores 2.89 for emotional problem, 3.33 for suicidal thoughts; $p < .001$). Results did not substantially change when examining individuals who frequently used or actively posted on Facebook.

Conclusions: Without interventions that modify health attitudes or behaviors, the typical military veteran with major depression in the United States appears unlikely to seek help for emotional problems or suicidality via social media.

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Paper Session 22: Innovations in Supporting the Healthy Veterans 4:30 PM-4:45 PM

OPTIMIZING FACEBOOK ADS TO REACH AND RECRUIT MILITARY VETERANS IN RESEARCH: A FACTORIAL DESIGN

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Background: Prior research has demonstrated the feasibility of recruiting research participants through Facebook ads, but less is known about the effectiveness of Facebook ads in reaching military veterans with health problems who are not engaged in VA care. This study tested the effectiveness of 15 ads in reaching this target population.

Methods: Facebook ads tailored to military veterans ran for 6 weeks, beginning January 2017. The call to action was completing an online health survey. Using a full 3x5 factorial design, ads varied imagery (person taking a survey; veteran with his family; soldiers marching) and headlines informed by behavioral economics principles (social norms; altruism; empowerment; incentive; and sharing). Reliable and valid self-report tools were used to screen for mental health problems (PC-PTSD, AUDIT-C, PHQ-2, and DSI-SS). Outcomes were click-through rate (CTR), survey completion, and cost per survey completed. Negative binomial models incorporating the full factorial design were used to compare image and headline main effects and interactions on each outcome.

Results: Overall, advertisements produced 827,918 impressions and 9,527 clicks (CTR=1.20%). 710 individuals were eligible for the survey, and 587 completed the survey (83% response rate). One hundred fifty-five participants (26%) had never been enrolled in the VA, and 322 (55%) had not used VA health care services in the prior year. Participants frequently screened positive for current mental health problems, including PTSD (52%), problematic drinking (51%), major depression (28%), and suicidality (22%). Total ad expenditure was \$11,427, yielding an average cost per completed survey of \$19.47.

The soldiers marching image had a higher CTR than other images ($p < 0.001$). “Sharing” and “incentive” headlines had higher survey participation than social norms ($p < 0.001$ and $p = 0.008$, respectively). Half of survey participants (n=285) were recruited by just 2 of the 15 ads: soldiers marching with an “incentive” headline and “sharing” headline. These two ads were also the most cost effective, at \$4.88 and \$5.90 per participant, respectively.

Conclusions: Facebook ads are effective in rapidly and inexpensively reaching military veterans, including those at-risk for mental health problems who are not receiving VA healthcare. Features such as images of soldiers, and headlines mentioning incentives or a request to share the ad with others may help optimize effectiveness of ads.

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Symposium 31

3:30 PM-4:45 PM

FUNCTION FOCUSED CARE: CHANGING BEHAVIOR IN CAREGIVERS AND COGNITIVELY IMPAIRED OLDER ADULTS

Barbara Resnick, PhD, CRNP, Sarah Holmes, MSW, Elizabeth Galik, PhD, CRNP, Barbara Resnick, PhD, CRNP

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Residents in long term care environments engage in limited amounts of physical activity and decline functionally more rapidly than would be expected based on disease. Reasons for decline are multifactorial and include resident factors (e.g., comorbidities, age, cognition) and setting factors (e.g., caregivers, environments and policies), among others. Environments in long term care settings impose barriers, particularly for cognitively impaired residents that minimize opportunities for physical activity. Depending on the settings, some may have limited open space for physical activity, and ambulation is discouraged because direct care workers and families fear residents will fall. Residents and families expect that direct care workers will complete necessary care tasks (e.g., the resident will be bathed and dressed) and often become distressed if direct care workers just provide encouragement, cueing or minimal assistance needed to assure that residents walk, dress and bathe at their highest level. Once residents are no longer allowed or encouraged to perform an activity, they lose the ability and motivation to do so. To address this persistent decline in functional and physical activity, we implement function focused care. Function focused care teaches caregivers to optimize the residents' participation in all activities. Examples of function focused care interactions include: modeling behavior for residents (e.g., oral care); providing verbal cues during dressing; walking a resident to the dining room; and providing recreational physical activity (e.g., Physical Activity Bingo). Implementation of Function Focused Care includes a four step approach: (1) Evaluation of Policies and Environments; (2) Education; (3) Evaluation of resident capability and goal setting; and (4) mentoring and motivating. Implementation of Function Focused Care improves resident function, physical activity and mood among and decreases transfers to the hospital. For caregivers, exposure to Function Focused Care consistently resulted in an increase in knowledge related to function focused care and the amount of function focused care provided. This session will review the impact of the environment on function focused care, innovative approaches for how to provide function focused care to those with moderate to severe cognitive impairment and the testing of an approach to disseminate and implement function focused care to 100 assisted living settings.

Symposium 31A

DISSEMINATION AND IMPLEMENTATION OF FUNCTION FOCUSED CARE 100 SETTINGS AT A TIME

Ms. Barbara Resnick, PhD, CRNP

There are resident and setting level challenges to dissemination and implementation of Function Focused Care in assisted living. Resident challenges include medical events, advanced age; sociodemographic characteristics; comorbidities; cognitive impairment and behavioral symptoms; lack of motivation; culture; pain; fear of falling; body mass index; and polypharmacotherapy. Setting level challenges include environments and policies that seek to minimize risk by limiting opportunities for physical activity and limited resources. To disseminate and implement Function Focused Care into 100 settings we identified resident and setting challenges, optimized use of available resources and provided direct care workers with ways in which to overcome these challenges using a theoretic approach that involves four steps: 1. Evaluation of the environment and policies; 2. Education; 3. Resident goals; 4. Mentoring and motivation. Social cognitive theory (SCT) was combined with the Social Ecological Model and the Evidence Integration Triangle (EIT). The SEM includes intrapersonal, interpersonal, environmental, and policy factors that influence behavior. SCT guides the interpersonal interactions that motivate direct care workers and residents. Self-efficacy and outcome expectations, the main components of social cognitive theory, are dynamic and enhanced by four mechanisms: (1) successful performance of the activity; (2) verbal encouragement; (3) seeing like individuals perform the activity; and (4) elimination of unpleasant physiological and affective states associated with the activity. We taught direct care workers to use SCT approaches to overcome many of the resident level challenges. The pragmatic EIT process begins and ends with engagement of local stakeholders. Guided by the EIT we involved a stakeholder team, selected by the setting, to be part of the implementation and evaluation process. Use of EIT integrates evidence with practical approaches and measures and assures continual feedback from stakeholders. We built off available resources within each setting (e.g., develop direct care workers as champions). The findings from our dissemination and implementation activities to 100 settings resulted in reaching over 1,000 residents, and improving policies and environments to facilitate function and physical activity among residents and resulted in a decrease in falls and hospital transfers. Findings from our first cohort of a second dissemination and implementation study will also be presented to reflect additional resident outcomes. Although behavior change in long term care is particularly challenging as it involves a two tiered approach that includes changing behavior among staff as well as residents, the use of the SEM, SCT and EIT is successful in making behavior change a reality.

Symposium 31B

THE IMPACT OF ENVIRONMENT ON FUNCTION AND PHYSICAL ACTIVITY

Sarah Holmes, MSW

Physical activity is important for health, well-being, and life-satisfaction of older adults in long term care settings. However, little is known about how the environmental influences and helps motivate residents in these settings to engage in physical activity. The purpose of this study was to examine factors that influence physical activity among residents in Assisted Living environments. We hypothesized that controlling for depression, cognition, comorbidities, and gender, residents who reported higher levels of satisfaction with their environment would be more likely to engage in physical activity. This was a secondary data analysis using baseline data from an intervention study testing the impact of function focused care in Assisted Living. A total of 171 residents from four Assisted Living facilities were included. Demographic information, mood, cognition, life satisfaction, time spent in physical activity based on the Physical Activity Survey for Long-Term Care (PAS-LTC) and social support for physical activity were obtained. Structural equation modeling was used to test the proposed model. The majority of participants were female (N=136, 80%) and Caucasian (N=160, 94%) with a mean Mini Mental Status Exam score of 23.2 (SD=4.9). Depression, satisfaction with staff and activities, and social support for exercise were directly associated with time spent in physical activity. Gender, cognition, depression, and number of comorbidities were indirectly associated with time spent in physical activity and accounted for 13% of the total variance in physical activity. These findings indicate that, although mood, cognition and gender influence physical activity, residents' satisfaction with staff and staff encouragement are novel factors influencing time spent in physical activity and should be the focus of future interventions.

Symposium 31C

TRICKS OF THE TRADE FOR BEHAVIOR CHANGE AMONG COGNITIVELY IMPAIRED OLDER ADULTS AND STAFF

Elizabeth Galik, PhD, CRNP

To optimally change behavior among staff and cognitively impaired residents we use a four step approach that includes first the assessment of policies and the environment to assure that there are no barriers to engaging residents in functional tasks and physical activity. Further we encourage instituting new policies that will assure residents are physically active, regardless of cognitive deficits. For example, we facilitate the implementation of Walk-to-Dine programs, the placement of weights at tables for residents to use while waiting for meals, and the development of open outside areas to walk. The second step is education of staff which is done in a way that best fits with the work flow and educational patterns of the setting. For some, we do one-on-one education on the unit and use a multiple choice test to complete the teaching. Formal group education is also done with testing to assure that information at least didactically has been increased such that there is an overall mean score of 80% on the Knowledge Tests for Function Focused Care. The third step is the completion of a capability assessment of the residents which is taught to staff. Assessment of capability involves evaluation of the resident's cognition and ability to follow commands as well as underlying physical ability related to range of motion, balance and ambulation. From this assessment, appropriate functional and physical activity goals are developed with the resident as he or she is able. Lastly we focus on motivation and mentoring of staff and residents. For staff motivation, we implement contests which include such things as sit-to-stand contests or wheelchair race contests so they experience what the residents' challenges might be. In addition, we have contests to see who can provide the best ideas for engaging residents in physical activity related to a holiday or outdoor activities. Lastly, we provide ongoing mentoring and motivating by providing a weekly Tidbit with ideas for how to engage residents in physical activity in innovative ways such as through household tasks. We have established techniques such as use of less touch and less talk as ways to engage residents. Findings support the value of function focused care with cognitively impaired older adults as a way to maintain and improve function and time spent in physical activity.

Thursday April 12, 2018 6:15 PM-7:15 PM

B001

6:15 PM-7:15 PM

A SMARTPHONE-BASED APPROACH TO GATHERING TWICE-DAILY REPORTS OF COMMUNICATION AND MOOD AMONG COUPLES COPING WITH CANCER

Shelby Langer, PhD¹, Michael Todd, PhD¹, John Burns, PhD², Joan M. Romano, Ph.D.³, Niall Bolger, Ph.D.⁴, Jonathan B. Bricker, PhD⁵, Karen Syrjala, PhD⁵, Francis Keefe, PhD⁶, Timothy J. Strauman, PhD⁷, Neeta L. Ghosh, MA, MPH⁵, Blair Puleo, BA⁶, Julie Gralow, MD³, Veena Shankaran, MD, MS⁸, Kelly Westbrook, MD⁹, Yousuf Zafar, Associate Professor¹⁰, Laura Porter, PhD⁶

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Questionnaire-based studies of couple communication in cancer indicate that avoidance of disclosure is associated with psychological distress but this work is largely cross-sectional and retrospective. We examined concurrent and lagged associations between communication and negative affect (NA) using a smartphone application to gather *ecological momentary* data based on standard questionnaire items: protective buffering (4 items), holding back (3 items), responsiveness and perceived partner responsiveness (3 items each; to what extent did you support/ understand/ criticize your partner; to what extent did your partner support/ understand/ criticize you), and NA (9 items). Participants were persons with stage 2–4 breast or colorectal cancer, and their partners. Patients and partners independently received 2 smartphone notifications/ day for 14 days. To date, 30 patients and 29 partners have provided data: M (SD) age = 51.0 (11.7), 60% female, 83% Caucasian, and 7% Hispanic [patients]; M (SD) age = 50.6 (11.4), 45% female, 83% Caucasian, and 3% Hispanic [partners]. 1284 (82%) of 1567 prompts were responded to. For patients, afternoon and evening holding back ($bs = 0.09$ and 0.19) and evening protective buffering ($b = 0.21$) were associated with greater concurrent NA, $ps < .01$; afternoon perceived partner responsiveness was associated with lower concurrent NA ($b = -0.12$, $p = .001$). Lagged analyses adjusting for afternoon NA approached significance, with afternoon protective buffering ($b = 0.07$, $p = .083$) and holding back ($b = 0.06$, $p = 0.05$) predicting greater evening NA. In cross-lagged analyses, afternoon NA predicted greater evening protective buffering and holding back ($bs = 0.28$ and 0.39 , $ps < .01$). For partners, afternoon and evening protective buffering ($bs = 0.15$ and 0.08) and holding back ($bs = 0.15$ and 0.14) were associated with greater concurrent NA, $ps < .05$. Afternoon and evening responsiveness ($bs = -0.19$ and -0.23) and perceived partner responsiveness ($bs = -0.21$ and -0.23) were associated with lower concurrent NA, $ps < .001$. In lagged analyses, afternoon holding back ($b = 0.09$, $p < .01$) and protective buffering ($b = 0.08$, $p = 0.059$), adjusted for afternoon NA, predicted greater evening NA. Cross-lagged models predicting NA from communicative behaviors were not significant for partners. These findings, although preliminary, underscore the critical role of both enacted and perceived partner communication on mood as well as possible reciprocal relationships across time between communicative behaviors and affect. Data collection is ongoing; analyses will be updated prior to the presentation with an expected sample size of 60 couples.

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B002

6:15 PM-7:15 PM

RURAL HEALTH DISPARITIES: WHAT DO WE KNOW?

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Various definitions have been used to delineate rural from urban populations in the U.S., based primarily on population size and proximity to urban areas. The lack of consistency in defining rural populations poses unique challenges for researchers interested in rural health disparities. Moreover, a better understanding of the diversity in health behaviors and outcomes within rural settings is needed. Rural areas are often underrepresented in research; although rural health disparities have been well documented. For example, compared to urban counterparts, those living in rural areas of the U.S. are more likely to be obese, have activity limitations due to chronic health conditions, and have a lower overall life expectancy. While people in rural America tend to get cancer less often than those in urban settings, they die from cancer at higher rates. Rural areas also tend to have higher incidence of and death rates from cancers related to tobacco use and cancers that can be prevented by screening. For example, compared to women living in urban areas, rural women are less likely to meet recommendations for mammography and are more likely to be diagnosed with breast cancer at a later stage of disease. The underlying causes of rural health disparities have been largely attributed to barriers in healthcare access, socioeconomic status, and certain health behaviors, such as higher rates of smoking, alcohol abuse, physical inactivity and obesity. Interventions to address the root causes of these health behaviors in rural areas are needed.

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B003

6:15 PM-7:15 PM

THE LAY OF THE LAND: CANCER HOT SPOTS

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Rural cancer control is often been overlooked as a health equity issue. Those living in rural areas of United States (U.S.) such as Appalachia, Mississippi Delta, Plains, and Pacific Northwest (herein referred to as rural) have difficulty accessing health care providers due to geographic distance and in turn obtaining quality treatment. This is because of sparse populations in rural areas that cannot support locally accessible healthcare providers. This is particularly a problem for cancer diagnosis, treatment, and follow-up. In addition, despite the fact that overall cancer morbidity has been decreasing in the United States, it has been decreasing at a much slower rate in rural areas. These trends point to widening disparities in cancer in rural locales over time. In this presentation, we will describe cancer “hotspots” and the characteristics of special populations that live therein. Geographic cancer clusters or “hot spots” are locales where cancer incidence rates are higher than the national and state averages. The CDC reports that lung, colorectal and cervical cancers are more prevalent in rural America than the U.S. as a whole. Contributors to rural cancer hotspots are much more varied than in urban areas where lifestyle and toxins can often be generalized. Higher rates of cancer incidence and mortality in rural areas is more challenging to understand because of the large variation and interaction of multilevel factors. These multilevel factors include individual and family, health provider and system issues, and community and environmental contributors. We will explore five distinct rural geographic hotspots and multilevel influences that contribute to increased incidence and mortality. We will also suggest strategies and interventions that can be useful to address rural cancer disparities.

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B004

6:15 PM-7:15 PM

CULTURALLY COMPETENT EDUCATIONAL INTERVENTIONS FOR PROSTATE CANCER SCREENING AMONG LATINO MEN

Kathleen Scura, EdD, RN¹, Maryelena Vargas, PhD, RN², Ji-Young An, PhD, MPH³¹Fairleigh Dickinson University, Carlsbad, CA; ²Fairleigh Dickinson University, Teaneck, NJ; ³Rutgers University, Camden, NJ

Background: Prostate cancer is the second leading cause of death in men and the most commonly diagnosed cancer among Latino men. Prostate cancer is curable if detected early but it can go undetected since it is pain free. Screening tests for prostate cancer are controversial, and experts recommend discussions with primary care providers (PCP) on an individual basis.

Purpose: This study aimed to explore if a nurse-led culturally competent educational program and a short video “Dos Amigos” developed for this pilot project increase knowledge, influence health attitudes/beliefs and practices (KAPs) of prostate health and the risks of prostate cancer in Latino men.

Methods: A mixed method design was employed including a pre/post survey questionnaire and focus group interviews. Convenience sampling was utilized (n=63; mean age=55.82 ± 5.56). The educational materials used were culturally sensitive and at an appropriate literacy level in English and Spanish. The content combined information regarding diet and exercise. A five-minute video in Spanish was utilized to increase KAPs in regards to preventive and early detection methods for prostate cancer, followed by focus groups in Spanish. G*Power 3.1, SPSS 24 and NVIVO 10 were used for data analyses.

Results: The majority were high school graduates (55.7%) and married (47.1%). The reliability (Cronbach’s α) of the KAP Questionnaire was .77 for pre-test and .87 for post-test. KAPs showed a significant difference between before and after the program ($t=2.71$; $d.f.=61$; $p=.009$). Age ($r=.342$; $p=.006$) and education ($r=.298$; $p=.018$) had a statistically significant effect on the post-test, respectively. Recommendations for prostate screening by PCPs and screening tests examined in the past did not show any statistically significant effect on either the pre-test and the post-test. Audiotaped focus group data were transcribed verbatim, and descriptive terms were openly coded, contrasted and compared. The discussion included how to locate Spanish speaking PCPs and financial coverage for their services via community resources.

Conclusions: The main contribution of this research is the culturally competent video intervention to reach and educate vulnerable populations that otherwise may not be reachable. The results demonstrate that the intervention was very effective in regards to increasing level of KAPs. Therefore, clinicians and researchers should be aware of the importance of understanding KAPs of Latino men. These factors influence behaviors necessary for preventive self-care practices and prevents utilization of more expensive tertiary modes of treatment.

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B005

6:15 PM-7:15 PM

DISTRESS AMONG PATIENTS WITH CANCER: THE INFLUENCE OF SOCIOECONOMIC FACTORS

Amy M. Williams, PhD¹, Michael Ryan, PsyD², Theodoros Varkas, LMSW², Wendy Goldberg, MSN, NP²¹Henry Ford Health System, Beverly Hills, MI; ²Henry Ford Health System, Detroit, MI

Cancer related distress is known to be under-recognized and under-managed. Identifying distress is a necessary first step in order to develop resources to address those needs. Previous research has found differences in distress based on urban compared to suburban residence, regardless of race. The current study seeks to further understand the diversity of distress across race/ethnicity and more objective measures of socioeconomic status.

Zip-code level socioeconomic data were merged with cancer distress screening data (n=717) to provide a marker of SES. Demographic data was gathered via chart review. These data were also included for unscreened patients who were eligible for screening (n=449). Descriptive and univariate analyses were conducted.

1166 patients receiving cancer care at a large, tertiary care cancer center. There were no significant differences in demographics between screening cohorts. Overall, non-whites lived in zip codes with lower household incomes and educational attainment, higher rates of poverty and rates of rented homes. Concerns about weight loss was more common in patients with lower household incomes, < HS education, and those living at

This is the first study that we know of to examine distress related to cancer care and objective markers of socioeconomic status. The current study extends the current research examining racial differences in distress and initiates the examination of distress beyond the simple grouping of race. Race is often seen as a proxy of SES in research examining health disparities, however it has been determined to not be the best measure and is often confounded by true socioeconomic variables. These more objective measures of SES, such as household income, education, housing, warrants incorporation in future research and use of race alone as a proxy of SES should be avoided.

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B006

6:15 PM-7:15 PM

EFFECTS OF CHRONIC STRESS ON MENTAL AND PHYSICAL HEALTH OF CANCER CAREGIVERS

Valentina Bolanos, MPH, Hannah-Rose Mitchell, MPH, Youngmee Kim, PhD

University of Miami, Coral Gables, FL

Family and friends of cancer patients (caregivers) have elevated health risk due to the strain imposed by their caregiver role. Among cancer caregivers, those with chronic financial and social stress may be at particular risk for negative health outcomes as early as the time of the patient’s diagnosis. We aimed to examine the association between chronic stress (i.e., financial, marital, and parental) and caregiver quality of life (i.e., mental and physical health) in caregivers of recently diagnosed colorectal cancer patients.

Caregivers (N=85) of newly and recently diagnosed colorectal cancer patients (Stage I-IV) participated in the study (M=50 years old; 57% Hispanic; 71% female; 3-months post-diagnosis; 56% low income; 44% patient’s spouse). Caregiver self-reported mental and physical health (MOS SF-12) were outcomes. Predictors were financial, marital, and parental chronic stress (Chronic Stress Scale). Age, ethnicity, gender, and household income served as covariates.

Caregivers reported levels of mental and physical functioning below the 25th percentile and around the 50th percentile of the US norms, respectively. General linear modeling simultaneously predicting mental and physical functioning revealed that low income ($B=-4.17, p<.01$), older age ($B=-.12, p=.02$), and male sex ($B=-4.61, p<.01$) related to caregiver lower self-reported physical health. No covariates significantly reported to caregiver self-reported mental health. After controlling for the effects of covariates, caregivers’ higher chronic financial ($B=-2.52, p=.05$) and parental ($B=-2.78, p=.04$) stress related to their lower self-reported mental health. Caregivers’ higher financial stress also related to their lower self-reported physical health ($B=-2.04, p=.03$).

Results suggest chronic financial and parental stress as sources of health disparities in cancer caregivers manifested as early as the time of the patient’s diagnosis and initiation of treatment. Family members entering the caregiver role with chronic stress may be at a heightened risk for the deleterious health effects of caregiving. Longitudinal research is required to examine the role of chronic stress in caregiver health over time. Findings also suggest multi-level caregiver interventions targeting structural and individual level stress management.

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B007

6:15 PM-7:15 PM

HEALTH LITERACY, ANXIETY, AND RISK OF HOSPITALIZATION IN MEN ON ACTIVE SURVEILLANCE FOR LOW-RISK PROSTATE CANCER

James Rogers¹, Brittany D. Cullen, MA², Joel Epling², Oliver Sartor, MD², Jonathan Silberstein, MD², Allison Feibus, MS², Michael Hoerger, PhD, MSCR²¹Tulane University, Monroe, NY; ²Tulane University, New Orleans, LA

Objective: Men with low-risk prostate cancer are increasingly managing their illness through active surveillance, and health literacy may be associated with patient outcomes. The purpose of this study was to evaluate whether health literacy was associated with health-related anxiety and hospitalization frequency among patients on active surveillance for prostate cancer.

Method: Participants were men with low-risk prostate cancer receiving active surveillance at the Tulane Cancer Center in New Orleans, Louisiana. The present analyses use baseline data from ongoing longitudinal data collection in which 45 participants to date have completed surveys on demographics, comorbidities, cancer symptoms, health literacy, health-related anxiety, and hospitalizations. Health literacy was evaluated using the Rapid Estimate of Adult Literacy in Medicine-Revised (REALM-R) test. Descriptive statistics and correlational analyses were used to characterize the sample and examine whether health literacy was associated with patient outcomes.

Results: We found that 35.6% (16/45) had clinically significant health illiteracy concerns according to established REALM-R criteria. As well, 30.2% (13/43) reported clinically-significant health-related anxiety, and 20.0% (9/45) reported having been hospitalized in the past year. Increased health literacy was associated with lower health-related anxiety ($r = -.316$, $p = .039$) and fewer hospitalizations ($r = -.325$, $p = .029$).

Conclusion: Health literacy concerns are prevalent and may be related to health-related anxiety and risk of hospitalization in men on active surveillance for low-risk prostate cancer. Findings suggest the need for further longitudinal research involving large samples as well as the need to consider how healthcare systems can support patients with low health literacy to improve their care.

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B008

6:15 PM-7:15 PM

HISPANIC ORIENTATION AND CANCER-RELATED KNOWLEDGE GAPS IN CHILDHOOD CANCER SURVIVORS

Cynthia Ramirez, MPH¹, Alix G. Sleight, PhD, OTD, OTR/L², Joel Milam, PhD³, Kimberly Miller, PhD, MPH¹¹University of Southern California, Department of Preventive Medicine, Los Angeles, CA; ²National Cancer Institute, Los Angeles, CA; ³University of Southern California, Los Angeles, CA

Background: Despite an increased risk for poor health outcomes throughout the lifespan, childhood cancer survivors (CCS) commonly report cancer-related information needs that are associated with poorer mental and physical health.¹ In addition, very little is known about cancer-related knowledge gaps among Hispanic CCS, who are both underserved in healthcare and underrepresented in the literature. Acculturation in Hispanics is a complex process and has been associated with both protective and deleterious health outcomes. Previous research has found greater Hispanic orientation to be associated with increased cancer-related knowledge in cancer survivors.² Acculturation may therefore be an important covariate when measuring cancer-related knowledge gaps in CCS.

Objective: Describe cancer-related knowledge gaps in a diverse sample of CCS and, among Hispanic CCS, assess relationship of cancer-related knowledge gaps with orientation towards Hispanic culture.

Sample: 193 Los Angeles County CCS diagnosed between 2000 and 2007 (54% Hispanic; average age 19.9 ± 2.8 years; age at diagnosis, 12.1 ± 3.0 years; time since diagnosis, 7.8 ± 2.0 years).

Methods: Self-report surveys were used to assess cancer-related knowledge, demographics, and clinical factors. Descriptive statistics were utilized and univariate and multivariable logistic regression analyses were conducted to determine relationships among variables.

Results: CCS in this study demonstrated several substantial gaps in knowledge regarding plans for their ongoing medical care as lifelong cancer survivors. 45% of participants reported being unaware that they will require follow-up care throughout the lifespan. 67% reported never receiving a written summary of their cancer treatment, and 42% reported never discussing future oncology-related follow-up care plans with their doctors. Hispanics with higher orientation toward Hispanic culture were significantly more likely to be aware of a need for future follow-up care ($r = 0.28$; $p = 0.004$).

Conclusions: Targeted education is necessary in diverse groups of CCS to improve cancer-related knowledge, particularly regarding the need for lifelong follow-up care. Among Hispanics, orientation toward Hispanic culture may offer protection against cancer-related knowledge gaps. Potential mechanisms behind this relationship require further research.

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B009

6:15 PM-7:15 PM

OPTIMISM PREDICTS LONG TERM SURVIVAL FOLLOWING AUTOLOGOUS STEM CELL TRANSPLANTATION

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As hematopoietic stem cell transplants (HSCT) increase, attempts continue to be made to identify modifiable variables which may predict, and if intervened on, influence survival although complexities between physical and psychosocial relationships make survival analysis difficult. This study seeks to understand psychosocial variables which influence five-year survival among patients who received HSCT. Based on review of the literature, cancer related variables including anxiety, depression, PTSD and trait optimism were investigated.

Participants: A total of 63 patients who underwent autologous HSCT participated. Mean age was 56 years ($SD = 12$), 24 were female (38.1%) and the most common diagnosis was Multiple Myeloma ($N = 28, 44.4\%$).

Measures: Measures were collected as part of a longitudinal study assessing psychosocial variables throughout HSCT from admission to 90 days post-transplant. Demographics, medical variables, the HADS, PCL-C, LOT-R and Brief Copc were administered.

Analysis: Univariate Cox Regression Models were used to regress survival time on Depression, Anxiety, PTSD, and Optimism. Significant predictors from the planned analyses were retained and plausible confounders including age, clinician rated risk status, cancer diagnosis, and ECOG status at the time of discharge were entered as covariates.

Results: Twenty participants (31.7%) were deceased at five-years. Depression, Anxiety, and PTSD were unrelated to survival. Optimism was significantly associated with survival ($\text{Exp}(B) = .87, p = .013$) such that each unit increase in optimism was associated with a 13% reduction in hazard. The adjusted model with plausible confounders of age, gender, medical risk, and discharge ECOG status did not significantly improve the model fit ($\chi^2 = 7.95, p = .094$). Optimism remained a significant predictor of survival ($\text{Exp}(B) = .89, p = .049$) with each unit increase in Optimism predicting an 11% reduction in hazard.

Conclusion: Contrary to expectations, negative valence including depression, anxiety and PTSD were unrelated to survival. These findings suggest that patients who look for good in the face of adversity were able to fair better in the long run. Although the relationship is unclear, it may be that patients who “feel better”, reflecting underlying physical health, have increased optimism. There also may be indirect relationships with optimistic individuals including improved social support, better relationships with providers and greater likelihood of commitment to pro-health behaviors. Future studies should examine the complex relationship between mediating psychological and cognitive variables, especially “positive psychology” domains.

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B010

6:15 PM-7:15 PM

PHYSICAL ACTIVITY, SEDENTARY BEHAVIOR, AND ALCOHOL USE AMONG BREAST CANCER SURVIVORS

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Multiple health behaviors impact breast cancer survivors'; quality of life during survivorship. Physical activity (PA) decreases the physical and psychological complications associated with breast cancer while sedentary behaviors (SED) may increase them. Alcohol consumption has been associated with increased breast cancer risk yet alcohol consumption is also positively associated with physical activity. This study examined associations between weekly alcohol use, physical activity, and sedentary behavior in a sample of 197 post-treatment breast cancer survivors ($M_{age} = 55.01, SD_{age} = 10.96$). Participants were initially diagnosed an average of 11.37 months prior to study enrollment ($SD = 4.36$), and the mean time since treatment completion was 3.98 months ($SD = 3.07$). The majority of participants (82%) were diagnosed with stage I and II cancers. Participants wore an accelerometer and provided daily self-reported alcohol intake for 7 days every 3 months for 5 measurement bursts. On average, alcohol consumption was positively associated with both duration of PA ($r = .19, p = .01$) and SED ($r = .16, p = .01$). Age was not associated with any of the health behaviors and did not moderate associations between PA/SED and alcohol consumption. Multilevel analyses indicated that breast cancer survivors consumed more alcohol on weeks when they were more physically active than usual ($b = .001, p = .02$). Sedentary behavior was not related to alcohol consumption at either the between- or within-person level ($p > .05$). Further research on the dynamics of multiple health behaviors is warranted, particularly to understand changes on fast time scales (e.g., within days). Researchers should also consider various domains of sedentary behavior that may be differentially associated with alcohol intake.

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B011

6:15 PM-7:15 PM

POSITIVE PSYCHOLOGICAL FACTORS PREDICTING SEVERE SLEEP DISTURBANCE AMONG CAREGIVERS OF CANCER PATIENTS

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Background: Informal caregivers (CGs) of cancer patients often experience sleep disturbances as a result of their caregiving role. Sleep disturbances are linked to measures of carer anxiety and depression, but the potential relationship between anxiety, depression, positive psychological factors and sleep disturbances remains unexamined in cancer patient caregivers.

Objectives: This study explored the link between resilience, hope, depression, anxiety and severe sleep disturbance (SSD) in a large sample of cancer CGs.

Research Design: An online Qualtrics survey assessed quality of life and psychosocial metrics in 467 self-identified cancer CGs. Sleep disturbance was assessed using the PROMIS sleep disturbance short form that was transformed into a binary variable. CGs with a t-score ≥ 60 were coded as 1 (SSD); those with t-score

Results: Mean age was 43 ($SD = 15.4$), a majority of participants were married (77 %) and female (61%), and 34% identified as a spousal CG. The primary cancer diagnoses were breast (21%), lung (15%), gastrointestinal (15%), and hematological (8%); 43 CGs reported SSD (9%). Male gender ($OR = 2.29, 95\% CI, 1.04-5.05$) resilience ($OR = 1.13, 95\% CI, 1.03-1.24$) and higher depression scores ($OR = 1.11, 95\% CI, 1.04-1.19$) were associated with an increased odds of SSD. Older age ($OR = 0.94, 95\% CI, 0.90-0.99$) was associated with a decreased odds of SSD. Non-significant predictors of SSD included marital and employment status, years caregiving, hope, anxiety and CG burden.

Conclusion: Caregivers who report higher levels of resilience are more likely to report sleep disturbance. These results are consistent with resilience theory which indicates that a positive adaptation to chronic stress is domain specific, and the presence of resilience does not imply a global absence of maladaptive functioning. In addition, these findings suggest that those who are older, male and who report higher levels of depression experience more sleep disturbance suggesting the need for more targeted interventions to populations at high risk for SSD.

Future Plans: Further research exploring the relationship between sleep disturbance, positive psychological factors, and caregiver-related stressors is warranted.

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B012

6:15 PM-7:15 PM

READINESS FOR WELLNESS PROMOTION - A SURVEY OF 100 AFRICAN AMERICAN CHURCH LEADERS IN SOUTH LOS ANGELES

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Background: South Los Angeles has a large proportion of African American residents, 38%, compared to 7% in California. It has the highest rate of obesity in the Los Angeles area and among the highest mortality due to diabetes, coronary heart disease, stroke, lung, breast, cervical and colorectal cancer. These disparities exist in a setting of disproportionate rates of poverty and limited access to care. Faith-based centers are an important asset and a trusted resource in the African American community. Prior to launching a large-scale partnership, we surveyed 100 church leaders in South LA to gain a better understanding of the readiness of churches to actively engage in health promotion.

Methods: With input from church leaders, we developed a theory-based capacity assessment survey. Capacity refers to factors that increase the success of implementing a health promotion program, including the community's *awareness* of the health problem, its *readiness and resources* to address it. At the organizational level, capacity speaks to the agency's *leadership, commitment, size and structure*. We also assessed *barriers* to implementing wellness activities and the type of *support* churches would require. We started surveys with churches to which our research team had existing relationships and used snowball sampling thereafter.

Results: Interviews were conducted face to face (34%) or by telephone (66%) with senior pastors at Baptist (52%), non-denominational (16%) or Methodist churches (13%). About half (54%) had ever partnered with an academic institution to promote wellness at their church. Many churches had been involved in wellness activities in the last 12 months that addressed cancer (44%), coronary vascular disease/stroke (31%), physical activity (29%), nutrition (22%) and diabetes (17%). Additionally, many were extremely interested in addressing violence in the community (73%) and in the family (59%) and in preventing STDs (61%). Based on a modified Implementation Leadership Scale, church leaders were moderately involved in supporting wellness activities. Most church leaders (88%) did promote physical activity or good nutrition from the pulpit, but only 35% had established health or wellness policies or had guidelines for healthy church meals. Although 58% of churches had a person appointed for health-related activities and 41% had a health/wellness ministry, only 31% had a budget for health related activities and of those, 90% stated that it was insufficient.

Discussion: Many churches in South Los Angeles are actively engaged in health promotion activities, despite a general lack of resources. We will discuss church leaders' needs regarding resources, their preferences regarding health promotion activities and correlates of churches' readiness for wellness promotion. Findings will guide our future collaborative health research in South Los Angeles.

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B013

6:15 PM-7:15 PM

STRATEGIES TO IMPROVE ADHERENCE TO TREATMENT FOR PATIENTS WITH CANCER: INNOVATIVE USE OF PATIENT PORTALS

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Background: Patient portals (PPs) are secure websites where patients can view their electronic health records (e.g., medications, laboratory results), send providers eMessages, and request medication refills and appointments. Most PPs also include other functions, such as reminders for laboratory tests, and grant caregivers proxy access. PPs are freely available to patients from their healthcare providers; however, adoption has been slow.

Objective: To collect pilot data on clinic patients' use of the Internet and the PP using an anonymous survey.

Method: Prospective, descriptive study design using anonymous surveys. Participants were recruited by the research team from the waiting areas of the outpatient clinic. The survey was administered in paper format over a two-week period and included questions about patient socio-demographics, such as age, race/ethnicity, gender, level of education, and native language; type of cancer, current stage of cancer, and current stage of their treatment of cancer (i.e., post-diagnosis but before treatment, active treatment, completed active treatment); and experience with computers, the Internet, PPs, and personal health records, as well as their experiences with patient-clinician communication and self-efficacy to use MyPortfolio (PP used by the hospital system). Descriptive statistics were computed to describe the data distributions, characterize the study sample, and describe patient Internet and PP use.

Findings: The participant sample (N=85) was 50.6% male, 63.5% white, and well-educated (80% with some college, college degree, or graduate degree). The mean age was 57.1 years (SD 13.4; range 23 – 62 years). English was the native language for 94.1% (n=80) of the participants. The types and stages of cancer varied greatly among the participants; the most common cancers included breast (4.7%), leukemia or lymphoma (29.0%), multiple myeloma (18.8%), and lung (6%). All patients used the Internet, and the majority of participants used a smartphone (e.g., iPhone, Galaxy; 90.6%). Thirty-six (42.4%) participants had used the PP prior to completing the survey. Given that all of the participants in our study used the Internet and 42.4% had used the PP, there is great potential for using PPs to deliver information tailored to the need of cancer patients and cancer survivors in this group.

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B014

6:15 PM-7:15 PM

THE IMPACT OF COMORBID DIABETES ON THE SYMPTOMS OF BREAST CANCER SURVIVORS

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Background. Studies have noted women with diabetes have a 23% higher risk of developing breast cancer (BC) than those without diabetes. Breast cancer and diabetes share common symptoms including decreased physical function, cognitive function, fatigue, depression, and pain contributing to decreased quality of life. Research in other cancers, has demonstrated that survivors with comorbid diabetes have increased symptoms, and poor health outcomes, however, a similar body of research as it relates to breast cancer survivors (BCS) with comorbid diabetes is lacking. The purpose of this study was to determine if differences exist between BCS with self-reported comorbid diagnoses of diabetes on physical function, attention function, sleep and fatigue; and to examine if there was a relationship between symptom severity among BCS with/without a diagnosis of diabetes.

Methods. This descriptive study used data from a larger quality of life study. BCS stages I-IIIa, 3 to 8 years post diagnosis and treatment, with no recurrence at the time of recruitment; and treated with chemotherapy.

Sociodemographic variables included age, income, education and marital status. Medical history included diabetes (yes/no), breast cancer staging and treatment, and BMI. Physical function was measured by the *Physical Function-10*. *Attention Function Index* measured attention function. *The Pittsburg Sleep Quality Index*, measured sleep. The *Functional Assessment of Cancer Therapy Fatigue Subscale* (FACT-F) a 13-item instrument measured fatigue. Independent *t* tests compared the means of symptoms (physical function, attention function, sleep and fatigue) of BCS with/without diabetes. Separate regression analyses were ran to assess the relationship of diabetes on each of the dependent variables (physical function, attention function, sleep and fatigue).

Results. 121 BCS identified as having diabetes. BCS were primarily Caucasian, married and well educated. BCS with diabetes were older, had a higher BMI, lower education and income.

Independent *t* tests demonstrated BCS with diabetes reported poorer physical and cognitive function, less sleep and greater fatigue. Regression analysis found significant relationships between BCS with diabetes and physical function ($p = .000$) and attention function ($p = .017$). Indicating BCS with diabetes have poorer physical and attention than BCS without diabetes. In this sample, BCS with diabetes did not report increased sleep disturbance ($p = .149$) or greater fatigue ($p = .098$).

Conclusion. This study indicates that BCS comorbid diabetes experience higher levels of symptom severity specifically poorer physical and attention function than BCS without comorbid diabetes. Baseline assessments of these symptoms at initial diagnosis, prior to initiation of and throughout treatment are important to assess to determine the impact of diabetes on the symptom severity.

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B015

6:15 PM-7:15 PM

CANCER SURVIVORS' FATALISTIC BELIEFS AND MENTAL HEALTH INDICATORS

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The National Cancer Institute (NCI) estimates that there are 15.5 million cancer survivors in the United States, a population that is slated to increase by 31% by 2026, thus demonstrating the need for more understanding of this unique population. The following study uses NCI's 2014 Health Information National Trends Survey 4 (HINTS 4) Cycle 4 data to examine the psychology of the cancer survivor and patient population. Of the total 3,677 respondents, 542 majority white, middle aged ($M=66.08$, $SD=13.70$), survivors of any type of cancer were included in this analysis. Cancer fatalism, the belief in the inevitability of cancer diagnosis and subsequent death, was assessed in four likert scale questions (recoded into agree and disagree) that assessed the extent that participants adhered to certain statements. Half (50.92%) of cancer survivors agreed with statement one: "It seems like everything causes cancer;" about a third (29.34%) agreed with statement two: "There is not much you can do to lower your chances of getting cancer;" over two thirds (69%) agreed with statement three: "There are so many different recommendations about preventing cancer, it's hard to know which ones to follow;" and almost half (43.73%) agreed with statement four: "In adults, cancer is more common than heart disease." Cancer survivors' experiences of mental health indicators using the PHQ4 (little interest, hopelessness, worry, and nervousness) ranged between 11.07% (of those frequently experiencing hopelessness) to 13.10% (of those frequently experiencing worrying), but almost a third (26.94%) reported being previously diagnosed with depression or anxiety. This analysis reveals a paradoxical belief system among cancer survivors who simultaneously believe that cancer is preventable, but that there are too many prevention recommendations. Nearly half of these survivors are also likely to believe that everything causes cancer, a belief closely related to feelings of worry and hopelessness. Interestingly, these beliefs of hopelessness and anxiety, do not carry over into the measures of mental health, perhaps suggesting that uncovering mental health difficulties in cancer survivors requires new methods, especially considering the high prevalence of previously diagnosed anxiety and depression. Because the belief systems that survivors hold are critical determinants of their responses to care, these findings demonstrate a need for further understanding of how cancer survivors perceive their risk and rate of cancer survival.

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B016

6:15 PM-7:15 PM

A MULTIVARIATE APPROACH TO EXAMINING POTENTIAL COMPONENTS OF INTERVENTIONS FOR CANCER PATIENTS

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Introduction: In a stress diathesis approach to conceptualizing adjustment to cancer, there are exacerbating variables, generically called Stressors, which may be related to poorer Outcomes, and there are Resource variables (e.g., coping, social support) that may inhibit the impact of Stressors on Outcomes such as emotional or functional well-being. In order to optimize facilitating forces and positive outcomes, it may be prudent to critically analyze, in a multivariate approach, the typical variables that constitute the diathesis in which one class of variables, that is Stressors, may be evaluated relative to another class of variables such as Resources or Outcomes. The purpose of this study was to critically analyze the relationship between classes of Stressors, Resources, and Outcomes to discover the most important variables in these sets relative to a criterion, the canonical (i.e., multivariate) correlation between these sets. This approach may set the stage for more powerful interventions that take into account the most dynamic stressors and resources in order to facilitate positive outcomes.

Method: 550 persons with cancer were given measures of 1) Stressors: life events, problems (e.g., financial, familial), symptoms (e.g., pain, fatigue), and serious comorbidities; 2) Resources: coping skills, social support, and satisfaction with care; 3) Outcomes: emotional well-being and functional well-being. Canonical correlation analyses (CCAs) were used to evaluate the relationship between each variable and the linear combination of two sets of variables (Stressors and Outcomes; Resources and Outcomes), that is the canonical variate.

Results: Based on eigenvalues one canonical variate accounted for over 90% of the variance in both CCAs. Based on the correlation of each Stressor with the Stressor-Outcome canonical variate, Problems ($r=-.59$) and Symptoms ($r=-.44$) emerged as the most critical variables. In the Resources-Outcomes CCA, the most critical variable in terms of correlation with the canonical variate was Coping ($r=.77$). These correlations are based on standardized canonical coefficients, thus an increase in 1SD for Problems would result in a .59 SD decrease in well-being outcomes. Also, a 1SD increase in coping skills would result in a .77 SD increase in well-being.

Discussion: These results indicate that with respect to the canonical relationship of Stressors with Outcomes, problems and symptoms are much more troublesome than life events or comorbidities. Moreover, with respect to Resources and Outcomes, coping, by far, was the most critical, compared to support and satisfaction with care. This type of analysis may help hone the components of interventions to zero in on the most critical problems and the most fruitful target of an intervention in order to have powerful, short term treatments that meet patient needs.

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B017

6:15 PM-7:15 PM

ANALYSIS OF ONE-CARBON NUTRIENTS AND THE DEVELOPMENT OF PANCREATIC CANCER

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Background: Pancreatic cancer is one of the most fatal cancers. It is biologically plausible that one-carbon nutrients, such as folate, vitamin B₆, vitamin B₁₂, and methionine, are associated with pancreatic cancer risk. The present study was conducted to investigate these associations in a population-based case-control study.

Methods: Cases (n=150) were recruited from all hospitals in the metropolitan areas of the Twin Cities and the Mayo Clinic, Minnesota. Controls (n=459) were randomly selected from the seven-county metropolitan communities of the Twin Cities and were frequency matched by age and (within 5 years) and sex. Logistic regression was used to estimate odds ratios (OR) and 95% confidence intervals (95% CI) for pancreatic cancer risk.

Results: After adjustment for confounders, dietary intake of folate was associated with a reduced risk of pancreatic cancer [OR (95% CI) for quartile (Q) 4 vs. Q1: 0.31 (0.12–0.78)]. An inverse association was also observed for dietary intake of vitamin B₆ [OR (95% CI) for Q4 vs. Q1: 0.58 (0.34–0.97)]. No significant associations were seen for intakes of vitamin B₁₂ and methionine. The observed inverse associations for dietary folate were more pronounced among ever smokers and ever drinkers compared with never smokers and never drinkers, respectively.

Conclusion: The present study suggests that high intake of folate and vitamin B₆ conferred some protection against pancreatic cancer risk and that these beneficial effects were modified by cigarette smoking and alcohol drinking.

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B018

6:15 PM-7:15 PM

ANXIETY SENSITIVITY'S IMPACT ON PHYSICAL ACTIVITY IN A COHORT OF ENDOMETRIAL CANCER SURVIVORS

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Background: Anxiety sensitivity (AS) is defined as the fear of physical symptomatology associated with anxiety. AS has been linked with energy balance factors such as physical activity levels. Additionally, self-efficacy has been linked to both physical activity, as well as anxiety sensitivity as a key determinant of health behavior. The role of AS on physical activity among cancer survivors is particularly relevant because cancer and treatment related physical symptoms may contribute to poor adherence to physical activity guidelines in this population. To date, few physical activity interventions have targeted endometrial cancer survivors and no interventions have explored the relationship between AS, determinants of physical activity such as exercise self-efficacy, and physical activity behavior among this population.

Present Study: AS encompasses a fear of a variety of somatic sensations such as tightness of chest, shortness of breath, rapid heartbeat, and these sensations are often associated with physical activity. We hypothesize that AS may moderate self-efficacy's effect on physical activity.

Method: Secondary data analysis of a behavioral intervention for endometrial cancer survivors was conducted ($N = 100$). Participants were predominantly diagnosed at stage I ($n = 80$), II ($n = 16$), or IIIa ($n = 4$), and predominantly white ($n = 75$).

Analysis: Baseline data physical activity measured right after baseline assessment were analyzed. Multiple linear regression and PROCESS macro for SPSS was used to assess moderation effects. Johnson-Neyman curve was utilized to assess conditional effects.

Results: The effect of exercise self-efficacy on physical activity was significant ($b = 4.91$, $se = 2.38$, 95% CI [.15, 9.66], $p = .04$), but the effect of AS was not. However, a conditional interaction was detected between AS and exercise self-efficacy. The Johnson-Neyman Curve analysis suggests a range of conditional effects, such that self-efficacy was positively related to physical activity when AS was low, but not when it was high.

Conclusion: While results indicate self-efficacy has a positive relationship with physical activity, this may be limited to survivors with low to moderate AS. Future interventions may consider tailoring materials for those with high baseline AS, teaching cognitive coping strategies for accurately appraising physical activity induced physiological sensations, which in turn, may increase their self-efficacy for engaging in physical activity.

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B019

6:15 PM-7:15 PM

BENEFIT FINDING BUFFERS THE IMPACT OF CANCER-RELATED MASCULINE THREAT ON DISTRESS IN YOUNG AND OLDER ADULT MEN WITH CANCER

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Objective: Benefit finding (BF) involves perceptions of significant positive changes within one's self, social relationships, ability to cope, and sense of life purpose as a result of adverse experiences such as cancer. While BF has been well studied in female cancer survivors, few studies focused on men with cancer. In breast cancer samples, BF's direct relationship with well-being has been inconsistent; suggesting that BF may instead act as a buffer against negative psychological influences related to cancer. Men diagnosed with cancer often feel vulnerable to cancer-related masculine threat (CMT), especially when their experience is inconsistent with their masculine self-image. In prostate cancer patients, CMT is associated with reduced emotion-regulation and worse health outcomes, including worse sexual and urinary function over time. The current study examined BF as a possible buffer against the CMT on psychological distress in young adults with testicular cancer (TC) and older adults with prostate cancer (PC), to examine these relationships across the lifespan.

Methods: Men treated for localized PC ($N = 66$; age range = 42–87, $M = 65.8$, $SD = 9.0$) within the prior 2 years and young adults with a history of testicular cancer ($N = 171$; age 18–29, $M = 25.2$, $SD = 3.3$) completed questionnaires, including the Benefit Finding Scale (Tomich & Helgeson, 2004), the Cancer-Related Masculine Threat scale (Hoyt et al., 2013), the Positive and Negative Affect Schedule (NA; Watson et al., 1988), and the Center for Epidemiologic Studies Depression Scale (CESD; Radloff et al., 1977). Multiple linear regression was used to test hypotheses.

Results: Men with TC reported higher BF, CMT, and depressive symptoms than older men with PC. Within both groups, CMT, and not BF, was positively associated with negative affect (NA) and depressive symptoms ($r = .52$ and $.57$ for TC patients; $r = .50$ and $.50$ for PC patients). However, BF buffered these relationships only in the young adult group, such that CMT demonstrated a stronger association with NA and depressive symptoms in men reported low BF (CESD: $\beta = 7.35$, $t = 5.76$, $p < .001$; NA: $\beta = 12.76$, $t = 6.28$, $p < .001$), compared to those reporting high BF (CESD: $\beta = 3.65$, $t = 3.24$, $p = .001$; NA: $\beta = 4.85$, $t = 3.214$, $p = .03$).

Conclusions: Men who experience masculine threat from cancer are at risk for poor adjustment, though perceiving social and psychological benefits from cancer might protect young men from its harmful impact. At younger ages, masculine identity might be more malleable whereby threats are more easily repaired. It might also be that threats to masculinity are more dynamic after TC (versus PC). Longitudinal data will be important for intervention development.

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B020

6:15 PM-7:15 PM

BUSTING THE “GOOD CANCER” MYTH: THYROID CANCER PATIENTS’ SYMPTOMS AND EXPERIENCES AFTER RADIOACTIVE IODINE THERAPY

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Background: Differentiated thyroid cancer (DTC) has the fastest rising cancer incidence in the U.S., yet remains vastly underexplored in terms of quality of life and survivorship experiences. Favorable outcomes after diagnosis of high-risk DTC may be largely due to use of radioactive iodine (RAI) therapy; RAI often does not provide benefit for low risk DTC. The range and impact of post-RAI side-effects are not well documented. The purpose of this study was to identify the range of symptoms experienced by patients after RAI.

Methods: We conducted focus groups with patients diagnosed with DTC treated with RAI within the past 10 years. Two trained facilitators guided participants’ discussion using semi-structured guides. Discussions were audiotaped and transcribed by team members. Two trained raters coded transcripts using content analysis and grounded theory methods with iterative refinement of the emerging codes.

Results: We enrolled 47 individuals into 8 separate focus groups (78.7% women; Mean age=52.1 Years; Range=28–89 years). The average time since diagnosis was 3.9 years and most participants had papillary thyroid cancer. Five primary themes emerged: Mouth/Salivary symptoms; Nasal Symptoms; Eye Symptoms; Functional Impact; and Uncertainty/ Communication. Examples of symptoms that participants reported within these five themes include extreme dry mouth, swollen or painful salivary glands, tooth sensitivity to hot and cold, changes in taste; blocked tear ducts, excessive tearing of eyes, dry eyes; sinus congestion, runny nose; cognitive ‘fogginess’; and uncertainty regarding whether symptoms were due to RAI or not. Participants reported that symptoms remained years after RAI treatment; for some, their diagnosis was ‘a shadow’; or a ‘life-long worry.’; A number of participants commented that they would not necessarily have RAI if they were to make the decision again. Almost all participants reported that they were unprepared for the range, type, or severity of symptoms they experienced after RAI. Strikingly, many participants also noted that their physicians were unfamiliar with what patients might expect after RAI.

Discussion: Results suggest many patients diagnosed with DTC and treated with RAI experience burdensome and impactful symptoms years after treatment. Study findings have implications for patient-physician communication and treatment decision-making, especially for patients with low risk DTC.

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B021

6:15 PM-7:15 PM

CHANGES IN BELIEFS ABOUT COMORBID DIABETES FOLLOWING NEW DIAGNOSIS OF CANCER

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Background: With improved survival and prognosis for many cancers, it is increasingly important to understand how a cancer diagnosis may impact patients’ perception of other comorbid illnesses, both immediately after cancer diagnosis and long-term following treatment. We undertook this study to assess the effect of cancer diagnosis on beliefs about comorbid diabetes over time.

Methods: We recruited patients with type II diabetes who were newly diagnosed with early-stage breast, prostate, lung or colorectal cancer and enrolled age-, gender- and hemoglobin A1c-matched diabetes patients. All patients completed the Beliefs and Illness Perceptions Questionnaire (BIPQ) for diabetes. Non-parametric analyses were used to compare cancer and non-cancer patients’ beliefs about diabetes at the time of enrollment and at 3-month and 9-month follow-ups. We used Wilcoxon’s signed rank test to compare changes in beliefs about diabetes within the two groups from enrollment to 3 months and enrollment to 9 months.

Results: Our sample included 173 participants, 75 of whom had a new diagnosis of cancer. The average age was 62 years and 53% were male. At the time of enrollment, subjects with cancer were less likely to report “I am always not feeling well because of my diabetes” compared to non-cancer participants (mean score: 1.39 vs. 2.74, $p=0.020$). Compared to non-cancer patients, cancer patients were less concerned about their diabetes at 3-month follow-up (mean score: 6.79 vs. 7.79, $p=0.016$) and less likely to report that diabetes caused them to feel unwell at 9-month follow-up (mean score 1.14 vs. 2.55, $p=0.013$). Among non-cancer participants, there was a decrease in the average score of how much diabetes affects them emotionally over time 3.73 at baseline vs. 2.87 at 9 months; $p=0.008$); other beliefs did not change. Among cancer participants, several beliefs about diabetes changed over time: concern about diabetes decreased at each time point (7.66 at baseline vs. 6.86 at 3 months [$p=0.037$] and 6.45 at 9 months [$p=0.023$]) and reported impact of diabetes on participants’ lives decreased from baseline to 9 months (4.12 at baseline vs. 3.22 at 9 months, $p=0.013$).

Conclusion: Diabetes beliefs differ for patients with and without a new cancer diagnosis. Cancer patients also demonstrate more changes in their beliefs about diabetes over time, while beliefs remain stable for non-cancer patients. Further research should investigate the effect of these changes in diabetes beliefs on patient’s diabetes management and control.

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B022

6:15 PM-7:15 PM

CHEMOTHERAPY-INDUCED NEUROPATHY AND THE BRAIN: AN FMRI STUDY OF 50 BREAST CANCER PATIENTS

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Background: Over half of patients receiving taxane, platinum, and vinca alkaloid chemotherapy experience chemotherapy-induced peripheral neuropathy (CIPN), which involves numbness and neuropathic pain in the hands and feet. CIPN has no effective treatments partly because its etiology is poorly understood. We theorize that CIPN symptoms are partly caused by impairment of interoceptive brain circuitry, which processes bodily sensations via the posterior insula and anterior cingulate cortex (ACC). We investigated whether CIPN is associated with altered connectivity in interoceptive brain circuitry.

Methods: Fifty women with breast cancer (50 ± 9 years) reported CIPN symptoms (CIPN-20) and underwent resting fMRI one or more times: before surgery, one month after completion of chemotherapy, and one year after chemotherapy. We used an *a priori* seed-based investigation of connectivity between the posterior insula and ACC. We compared connectivity between 31 patients without CIPN symptoms (≤ 10 CIPN-20-Sensory), 19 patients with CIPN symptoms (> 10 CIPN-20-Sensory), and 280 healthy adults (174 women, 19.3 years) from another study.

Results: Patients with CIPN symptoms had significantly reduced connectivity between the posterior insula and the ACC compared to patients without CIPN symptoms ($p=0.01$, $d=0.73$). Connectivity between the posterior insula and the ACC was negative in patients with CIPN symptoms but positive in both healthy adults and patients without CIPN symptoms.

Conclusions: CIPN is characterized by reduced connectivity in interoceptive brain circuitry. Interoceptive networks may be a target for behavioral interventions known to activate interoceptive brain circuitry (exercise, meditation) to prevent or treat CIPN. Future work will assess causal relationships between CIPN symptoms and reduced connectivity.

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B023

6:15 PM-7:15 PM

CORRESPONDENCE BETWEEN OBJECTIVE AND SELF-REPORTED ENDOCRINE THERAPY ADHERENCE AMONG WOMEN WITH BREAST CANCER

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Endocrine therapies (i.e., tamoxifen, aromatase inhibitors) lower the likelihood of recurrence in the approximately 70% of women with hormone receptor-positive breast cancers. However, rates of non-adherence to endocrine therapies among women with breast cancer remain high. In this prospective study, we examined correspondence between self-reported and objective adherence to endocrine therapies among survivors of breast cancer. Participants with breast cancer ($N = 130$) receiving their initial endocrine therapy prescription were recruited from a community oncology clinic. Participants took part in three interview sessions at the clinic at prescription initiation (T1), one month (T2), and four months later (T3). Questionnaires addressed women's self-reported adherence, among other variables. At the initial appointment, participants were provided a Medication Event Monitoring System (MEMS) cap to assess adherence; the MEMS cap was collected at T3. At T2, 63% of women reported never forgetting their medication, 80% of women reported never forgetting a pill in an average week during the past month, and 78% of women reported forgetting no pills during the past week. At T3, 51% of women reported never forgetting their medication, 72% of women reported never forgetting a pill in an average week during the past month, and 78% of women reported forgetting no pills during the past week. Across all time points (T1-T3), MEMS measurements revealed that only 7% of women were 100% adherent. The MEMS indicator percent correct (i.e., the number of days a dose was taken/the number of days the participant had the pill bottle) was significantly negatively correlated with the T2 self-reported non-adherence measurements of occasionally forgetting ($r = -.31$, $p r = -.34$, $p < .001$), and non-adherence in an average week in the past month ($r = -.33$, $p < .001$). MEMS percent correct and T3 self-reported adherence measurements were negatively associated: occasionally forgetting ($r = -.42$, $p r = -.49$, $p r = -.55$, $p z = 0.94$, $p = 0.347$) nor the correlation change between non-adherence in the past week and MEMS at T2 and T3 ($z = 1.35$, $p = 0.177$) was significant. However, the correlation change between non-adherence in an average week in the past month and MEMS at T2 and T3 was significantly different ($z = 2.13$, $p = 0.033$). The significant difference in correlations between T2 and T3 in combination with the larger magnitude of the correlation at T3 may indicate that assessing adherence over a longer period of time is necessary to obtain a more accurate self-report of adherence. These results suggest moderate correspondence between objective and self-report measures, however, self-reported measures of adherence may overestimate actual adherence. Furthermore, measurement of adherence to endocrine therapies over at least four months is recommended.

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B024

6:15 PM-7:15 PM

DEPRESSION, PRO-INFLAMMATORY CYTOKINES, AND RAGE-ASSOCIATED S100A8/A9 LEVELS IN BREAST CANCER PATIENTS

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Introduction. The link between depression and breast cancer outcomes has been a topic of great interest for a decade. Up-regulated inflammatory signaling may be one of the biological mechanisms at play. The purpose of this study was to examine the relationship between depression severity levels, pro-inflammatory cytokines IL-1 β , IL-6, and TNF- α , and ligands associated with the receptor for advanced glycation end products (RAGE). Activation of RAGE by ligands S100A8/A9 can trigger pathways that promote inflammation. To date, no study has linked depression with RAGE ligands in breast cancer patients.

Method. Women in South Florida (ages 32–69) with Stage 0-III breast cancer were recruited 2–10 weeks post-surgery between December 1998 and February 2005 as part of a randomized controlled trial of a stress management intervention. They completed the Hamilton Rating Scale for Depression (HRSD) and provided blood samples before initiating adjuvant chemotherapy or radiation. Participants in this sample (N= 59) were predominately non-Hispanic white (72.9%), followed by Hispanic (20.3%) and Black (5.1%).

Results. Using linear regression, we found that after controlling for age, stage, body mass index (BMI), time since surgery, and type of surgery (mastectomy versus lumpectomy), depression severity related to significantly greater levels of S100A8/A9 ($p = .038$), IL-1b ($p = .011$) and TNF-a ($p = .026$) and marginally with IL-6 ($p = .062$).

Conclusion. These data suggest that depression may relate to multiple markers of inflammation in breast cancer patients at an early point in their treatment. Because inflammatory processes may increase odds of metastasis, addressing depression early in the post-surgical period may have future health effects in breast cancer patients.

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B025

6:15 PM-7:15 PM

DOCTOR-PATIENT COMMUNICATION IN THE BRCA-PATIENT EXPERIENCE: 'EVEN THOUGH IT'S SPECIALIZED CARE, IT'S NOT PERSONALIZED CARE'

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Genomic or personalized medicine promises to individualize medical treatment to a patient's unique genetic makeup. However, in focusing on the minutia of the body, this treatment risks contributing to the fragmented culture of medicine in which a person's body is split between multiple care providers and the psychological self is divided from the body. This qualitative study investigated the provider-patient experiences of 19 women who carry a BRCA 1/2 genetic mutation, which predisposes them to breast and ovarian cancer. Using Grounded Theory to analyze the interviews, the study identified the theme of fragmented health care in the BRCA-patient experience. This theme appeared in two ways: 1) fragmentation of medical care, in which patients experience their treatment and body parts as split up among providers and 2) fragmentation of self, in which patients experience medical encounters as paying more attention to physical symptoms than to psychological and subjective experiences of health and illness. The study also identified a "holding environment," that mediated the participants' experience of fragmentation. Two types of holding environments were noted: 1) Concrete holding, which included integrated care among providers wherein the providers discussed and shared treatment of the patient and 2) Metaphoric holding, wherein providers focused not on patients' bodies alone but also on their emotional experiences. These findings suggest that the least fragmented medical encounter for patients with BRCA 1/2 mutation should include an integrated model of care through which treating clinicians work together in a coordinated manner and pay attention to the patient's body, thoughts, and feelings.

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B026

6:15 PM-7:15 PM

EFFECT OF AN ONLINE TRAINING PROGRAM ON PRIMARY CARE PHYSICIANS' KNOWLEDGE, BELIEFS AND ATTITUDES ABOUT CANCER CLINICAL TRIALS

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Introduction: Participation in cancer clinical trials (CCTs) is critical to improving cancer treatments and quality of care. However, rates of patient participation remain low, particularly among racial and ethnic minorities. Research has shown that a trusted physician recommendation is important to the decision to enroll in a CCT. Patients generally have high levels of trust in their primary care physicians (PCPs). However, PCPs' knowledge is limited and attitudes and beliefs about CCTs may inhibit recommendations. Improving PCPs' knowledge, attitudes, and beliefs about CCTs is a promising potential path for improving CCT participation, especially for minority patients.

Methods: Forty-one PCPs in the New York City area who treat minority patients participated in a 1-hour online pilot training session on cancer clinical trials. The objectives of the training module were to (1) educate the PCPs about clinical trials, with a focus on overcoming misconceptions; and (2) discuss roles of PCPs in partnering with oncologists to help patients gain access to clinical trials. The training module included didactics, audio excerpts and case descriptions. Participants completed a pre-test immediately before taking the course, a post-test immediately after taking the course, and a 3-month post-course survey. All three assessments included: a general T/F knowledge test, a 7-item attitude/belief scale, and a knowledge test focused specifically on local resources and access for clinical trials.

Results: Forty-one PCPs completed the module and the pre-post course surveys. Eighty percent (33/41) also completed the three-month post-course survey. Pre-post mean comparisons showed that general knowledge, attitudes/beliefs, and local knowledge all increased significantly.

Conclusions: A brief online course showed significant and sustained improvement in PCPs' general and local knowledge about cancer clinical trials, which translated into self-reported behavior change. Future dissemination of the course and further research into its impact are planned.

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B027

6:15 PM-7:15 PM

EFFICACY IN PATIENT-PHYSICIAN INTERACTIONS AND CANCER SURVIVORSHIP CONFIDENCE IN WOMEN ENDING TREATMENT FOR BREAST CANCER

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Cancer patients have unique health care needs as they transition from active treatment to survivorship. Confidence levels in the ability to manage survivorship varies among patients. The relationship between patients and providers is an important factor that may influence confidence as patients move into survivorship. As part of an ongoing Randomized Control Trial (RCT) examining the impact of Breast Cancer (BC) survivorship planning on patients' Quality of Life, we examined the relationship between patient efficacy in their interactions with providers and confidence related to entering survivorship. We gave patients the Confidence in Survivorship Information (CSI) and the Perceived Efficacy in Patient-Physician Interactions (PEPPI) scales at the end of active treatment for breast cancer. The CSI provides an overall confidence scale and subscales for confidence in knowledge of 1) diagnosis and treatment, and 2) prevention and treatment of long-term effects. Scores for the CSI range from 1–3, with higher scores indicating greater confidence. The PEPPI measures patients' self-efficacy in obtaining medical information and attention to medical concerns from physicians. Scores for the PEPPI range from 1–5, with higher scores indicating higher confidence. Patients (n=64) were non-metastatic, predominantly White (94%) and married (61%), with a relatively high education level (61% 4-year college degree or beyond) and a mean age of 60 years old. Most patients had been diagnosed within 9 months (94%) and were diagnosed with stage 1 or 2 (77%). The overall average for the CSI was 2.34 (.43), and the subscales were 2.86 (.24) and 2.19 (.53), respectively. On average, patients scored 4.47 (.66) on the PEPPI. Analyses showed that higher overall confidence in self-efficacy for patient-provider interactions was significantly correlated with higher overall confidence for survivorship ($r = .52$), as well as subscale 1 ($r = .47$) and 2 ($r = .48$). Results indicate that patients that feel efficacious in their relationships with their providers also tend to feel more confident in their knowledge as they enter survivorship. The patient-provider relationship as it relates to confidence, then, may be a key factor in supporting cancer survivors.

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B028

6:15 PM-7:15 PM

ESTIMATION OF PHYSICAL ACTIVITY CUT-POINTS USING ACCELEROMETRY IN BREAST CANCER SURVIVORS AND AGE-MATCHED CONTROLS

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Background: Measuring physical activity (PA) is important to accurately characterize PA patterns and the strength of association between PA and disease outcomes in cancer survivors. Accelerometers are a valid measure of overall PA in cancer survivors, but there is no evidence on the validity of accelerometer cut-points for quantifying moderate-to-vigorous PA (MVPA) in breast cancer survivors (BCS) compared with the general population. The assumption of a strong association between accelerometer output and energy expenditure has been tested in the general healthy population, but not in BCS.

Purpose: To examine the association between the rates of accelerometer activity counts and energy expenditure during walking in BCS compared to age-matched healthy controls, and examine possible differences in cut-points for MVPA.

Methods: Using a case-control design, 19 BCS who have completed primary treatment and 19 age-matched women without a cancer diagnosis completed 6 minutes of resting energy expenditure and 5-minute periods of walking at speeds of 1, 2, 3, and 4 mph on a treadmill. Participants wore an accelerometer (i.e., GT3X+) and breath-by-breath analysis of expired gases was conducted using an open-circuit spirometry system to measure energy expenditure (i.e., VO_2). Repeated measures analysis of variance was conducted on activity counts and VO_2 . Independent samples t-tests were conducted to compare the magnitude of association, slope, and intercept.

Results: Significant differences were found in metabolic rate where BCS had higher energy expenditure compared to controls for the walking speeds ($p < .001$), and accelerometer counts ($p < .001$). There was a strong linear association between accelerometer activity counts and energy expenditure overall, with a mean $R^2 = 0.90 \pm 0.16$. The magnitude of the linear association did not differ between BCS and controls for the R^2 ($p = 0.62$) or slope ($p = 0.43$), but differed in terms of the intercept ($p = 0.01$). This resulted in different cut-points for MVPA: $1,439 \pm 761$ counts·min⁻¹ in BCS and $1,937 \pm 639$ counts·min⁻¹ in controls.

Conclusions: The findings support the application of different accelerometer cut-points for quantifying PA in BCS. Energy expenditure and accelerometer activity counts differed between the groups despite using the same exercise stimuli. The cut-point for controls overlaps with those provided in the general literature thereby validating our approach. Such data are essential for accurately characterizing PA necessary for prescription, monitoring, and better health outcomes in PA programs for BCS.

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B029

6:15 PM-7:15 PM

FACTORS AFFECTING BEHAVIORAL INTENTIONS TO OBTAIN SCREENING FOR CRC IN HISPANICS OF MEXICAN DESCENT

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Background/Purpose. Colorectal cancer (CRC) is the second most commonly diagnosed cancer and the third leading cause of cancer-related deaths among Hispanic men and women in the US. While Hispanics in the U.S. show favorable outcomes for CRC compared to all other racial ethnic groups, Hispanics residing along the U.S. Mexico Border exhibit disparities in both CRC incidence and mortality. Several risk factors may account for these late CRC stage diagnoses and mortality rates. The purpose of this study was to examine general (e.g., confidence to obtain screening) and cultural beliefs (e.g., fatalism) that may increase or reduce behavioral intentions to participate in CRC screening among Hispanics of Mexican descent.

Methods. Study participants included 153 Hispanic adults, who had never been screened/diagnosed for CRC, were at least 50 years old, and lived in the U.S.-Mexico border region (e.g., Dona Ana, NM and El Paso, TX counties). Women composed 73% of the sample. Factors assessed in this study included 1) perceived benefits of screening 2) self efficacy to obtain screening, 3) subjective (injunctive) norms for screening, 4) fear of screening, 5) cancer fatalism, 6) acculturation, 7) machismo and 8) behavioral intentions to get screened. All measures were assessed via a self-report survey in the participants preferred language. Pearson correlations were calculated.

Results/Findings. Perceived benefits of screening, self efficacy to obtain screening, and subjective (injunctive) norms for screening were all positively related (all r 's $> .38$, $p < .05$) and acculturation and machismo were negatively related (both r 's $> .17$, $p < .05$) to behavioral intentions to screen for CRC. Interestingly, cancer fatalism and fear demonstrated no significant relation to behavioral intentions.

Discussion. Hispanics of Mexican descent would benefit from interventions that target those belief systems that promote CRC screening. It is important to address culturally-related beliefs acting as barriers to cancer screening and prevention.

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B030

6:15 PM-7:15 PM

FEASIBILITY AND EFFICACY OF HIGH-DOSE VITAMIN D SUPPLEMENTATION ON BONE DENSITY IN OLDER PROSTATE CANCER PATIENTS: A PHASE II RCT

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Background: Use of androgen deprivation therapy (ADT) for prostate cancer (PCa), which can cause rapid bone loss, has greatly increased over the past decade. Vitamin D (VITD) may protect against bone loss; however it remains unclear if the recommended daily allowance (RDA) of VITD is sufficient to reduce bone loss or whether higher doses are needed. The aim of this phase II RCT was to collect preliminary data on the effect of high-dose VITD on bone mineral density (BMD) and bone biomarkers in ADT-treated PCa patients compared to the RDA of VITD.

Methods: Older PCa patients (≥ 60 years old) with VITD insufficiency (< 32 ng/ml), beginning ADT with 6 more planned months of ADT were randomized 1:1 to high-dose VITD (hVITD; 600 IU/daily plus 50,000 IU/weekly) or RDA of VITD (rVITD; 600 IU/daily plus placebo weekly) for 24 weeks. All subjects received 100% of the RDA for calcium (1,000 mg/day). BMD was assessed at the total hip (TH) and lumbar spine (LS) via DXA at pre- and post-intervention. ANCOVA tested the change from baseline in BMD and biomarkers between groups.

Results: 59 PCa patients were accrued (85% white; mean age = 67.6). Serum analyses confirmed compliance in both groups (25-OH VITD change: hVITD = +32.0 ng/ml vs rVITD = +4.3 ng/ml; $p < 0.01$). Hypercalcemia was limited to 1 subject. Bone loss was significantly reduced for the hVITD group compared to rVITD group for total hip (BMD% change: hVITD = -1.5% vs rVITD = -4.1%; Cohen's $d = 0.21$; $p = 0.02$), with a trend for the femoral neck (BMD% change: hVITD = -1.7% vs rVITD = -4.3%; Cohen's $d = 0.19$; $p = 0.06$). There was no difference in LS BMD loss between groups. A biomarker of bone formation increased in the hVITD group (Osteoprotegerin: Cohen's $d = 0.27$; $p = 0.09$) as did biomarkers of bone resorption (NTX: Cohen's $d = 0.55$; $p < 0.01$; CTX: Cohen's $d = 0.49$; $p = 0.02$).

Conclusions: The rate of BMD loss within this sample population was substantial. Even with the high rate of BMD loss in this population, hVITD supplementation produced significantly greater reductions in hip BMD loss compared to rVITD. hVITD increased formation biomarkers as expected. hVITD also significantly increased resorption levels, which could be related to the current use of ADT or could support a different mechanism of action than current bone drugs, which are anti-resorptive; future research is needed to further understand these mechanisms. Clinically, higher doses of VITD may be necessary to effectively prevent ADT-induced BMD loss. A definitive phase III RCT is needed to confirm these findings.

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B031

6:15 PM-7:15 PM

HEALTH BEHAVIORS IN INDIVIDUALS WITH INHERITED OR FAMILIAL RISK FOR PANCREATIC CANCER

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Background/Significance: Individuals at high risk for inherited pancreatic cancer cared for within a comprehensive cancer center are encouraged to meet national recommendations for healthy lifestyle and to undergo annual surveillance with MRI or endoscopic ultrasound (EUS). There has been limited literature evaluating patient engagement or receptivity to lifestyle modification, behavioral change, or surveillance. In preliminary qualitative research completed by the study team, participants reported actively seeking information and ways to “do something” to manage their risk and avoid similar death experiences witnessed within the family. More information is needed to understand current health beliefs and behaviors in this population to guide future clinical and research interventions.

Purpose: Evaluate participant outcomes and the relationships between demographic and personal factors (age, gender, family history, cancer risk perception, pancreatic cancer specific distress) and behaviors (alcohol intake, smoking behavior, pancreatic cancer surveillance behavior or experience) in adults at risk for pancreatic cancer.

Methods: A multi-site cross-sectional survey study guided by the Health Belief Model including high risk adults with no personal history of pancreatic cancer. All variables were summarized with descriptive statistics. Wilcoxon rank sum test, Fisher’s exact test were used to assess univariate associations.

Results: Of the 132 respondents, 92(70%) report undergoing surveillance which was associated with older age ($p=0.001$) and having lost a family member to cancer ($p=0.05$), and 89% intend to continue. 36% and 51% report that MRI or EUS were uncomfortable, respectively. Of those who report alcohol consumption ($n=88$); 15% consume 1 or more drinks daily and alcohol consumption was associated with higher distress scores ($p=0.02$). 30% ($n=40$) of the sample reported smoking in their lifetime and 6 were current smokers, 5 of which intend to quit in the next 6 months.

Discussion/Conclusions: In this study, most participants were engaging in pancreatic cancer surveillance. Alcohol intake was moderate and tobacco use was minimal. Age, family experience, and distress were related to behaviors and provide information regarding modifiable factors to target for future intervention research.

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B032

6:15 PM-7:15 PM

HEALTH-RELATED QUALITY OF LIFE AS A DETERMINANT OF EHEALTH ACTIVITY FREQUENCY AMONG CANCER SURVIVORS

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There has been dramatic growth in the number of eHealth interventions specific to cancer care, including cancer survivorship. Yet, little is known about the determinants of eHealth activity in this patient population. Uses and Gratifications (U & G) Theory posits that eHealth activity is not random or passive, but a strategic choice based on one’s needs. The current study investigates health-related quality of life (HRQOL) as a determinant of eHealth activity in a population-based sample of 284 African American and white cancer survivors (breast, prostate, and colorectal). Participants were recruited from the Metropolitan Detroit Cancer Surveillance System (MDCSS), part of the National Cancer Institute’s Surveillance, Epidemiology, and End Results (SEER) program. The mean age of participants was 61 years; 68% identified as female and 32% identified as male; 54% were African American and 46% were white. Participants completed the eHealth Activity Assessment (eAA), a mixed methods interview examining 17 eHealth activities across 5 domains: informational, communal, self-care, expert care, and transactional. The eAA included assessment of the frequency of each activity, ranging from 1=never to 5=at least once a day. Participants also completed the Functional Assessment of Cancer Therapy – General (FACT-G), which includes subscales measuring physical well-being (PWB), social well-being (SWB), emotional well-being (EWB), and functional well-being (FWB). Multivariate regression analyses revealed that, after controlling for significant demographic and clinical covariates of mean eHealth frequency (specifically, race, age, household income, employment status, and extent of insurance coverage), the FACT-G was independently and negatively associated with mean frequency of eHealth activity ($p<.002$), along with income ($p<.002$) and employment status ($p<.005$). PWB ($p<.0003$), EWB ($p<.006$), and FWB ($p<.05$) were also negatively associated with frequency, with race and insurance coverage no longer significantly associated with activity frequency in all multivariate models. Findings support U&G Theory and suggest that low HRQOL among cancer survivors may drive their eHealth activity and digital efforts to address their needs. Increasing the availability and accessibility of high-quality eHealth resources may be an effective intervention strategy to support survivors who seek to improve their well-being.

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B033

6:15 PM-7:15 PM

ILLNESS PERCEPTIONS AND BREAST CANCER RISK-REDUCTION INTENTIONS: THE COMMON-SENSE MODEL APPROACH

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Objective: Leventhal's Common Sense Model (CSM) is a conceptual framework for understanding health decision making. The CSM proposes that illness perceptions guide self-management of health. The present study examines the CSM in the context of BC risk management. Women at high risk for breast cancer (BC) must cope with the likelihood of severe future illness and take actions to mitigate risk. Using the CSM, we hypothesized that higher levels of all illness perceptions (consequences, timeline, personal control, treatment control, identity, concern, understanding, emotions) would be related to greater intentions for risk management behaviors.

Methods: A single group, cross-sectional design was used. Women at elevated BC risk (N=103) completed the Brief Illness Perceptions Questionnaire (BIPQ) and reported intentions ("yes," "no," or "unsure") for risk-reducing behaviors (mastectomy, oophorectomy, chemoprevention, lifestyle changes). Intentions were combined into a single composite variable; higher scores represent greater intentions for risk reduction. Hierarchical linear regression tested illness perceptions in relation to global intentions for BC risk management. Control variables were empirically selected and included Gail Model score, age, partner status, education, and employment status.

Results: Consequences ("How much does your risk affect your life?", $\beta=0.25$, $\Delta R^2=0.08$, $p=0.02$) and identity ("How much do you experience symptoms as a result of your risk?", $\beta=0.30$, $\Delta R^2=0.09$, $p=0.01$) were significant predictors of intentions for BC risk reduction. No other illness perceptions demonstrated significant effects (all p 's >0.05).

Conclusions: Consequences and identity were related to risk-management intentions. As these items assess the impact of BC risk on present functioning, intentions for future behavior may be best predicted by present experience rather than impending health threats. These findings suggest that interventions among women at high risk of breast cancer, including genetic counseling, may benefit from bringing the long-term consequences of risk to present awareness.

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B034

6:15 PM-7:15 PM

INCREASING THE CAPACITY TO PROMOTE CANCER SCREENING IN AFRICAN AMERICAN CHURCHES IN SOUTH LOS ANGELES

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Background: Churches are important assets in the African American community and many are interested to engage in engaging in health promotion. We are conducting a 3-year pilot study with African American churches to gain a better understanding of what it takes for churches to implement an evidence-based program to promote cancer screening among parishioners.

Methods: We are aiming to increase the capacity of 10 African American churches in South Los Angeles to promote cancer screening by training Community Health Advisors (CHAs) at each church. Training workshops include (1) general information on national cancer screening guidelines and on evidence-based strategies to promote cancer screening and (2) training and practice of the study protocol, in which CHAs learn to recruit and consent participants, screen for eligibility of study participants (age 50–75; baseline non-adherent to screening guidelines for breast, cervical, or colorectal cancer or never discussed PSA test with physician); and provide one-on-one counseling on cancer screening tests that are needed. Trainings are evaluated with pre- and post-tests to assess CHAs'; knowledge of human subjects protection rules (5 items) and colorectal cancer screening guidelines (4 items) and perceived self-efficacy for performing specific tasks of the study protocol (13 items, Cronbach's alpha $> .90$). In addition, we are assisting each church to develop SMART objectives (Specific, Measurable, Achievable, Realistic, Time-bound) that specify organizational activities the church will implement to promote screening.

Results: We trained 51 CHAs from 10 churches (80% female, average age 63 years, 49% had a health care background). CHAs'; knowledge scores on human subjects protection rules increased from 4.5 to 4.7 on a 5 point scale ($p<.02$), their knowledge score on CRC screening guidelines increased from 2.1 to 3.4 on a 4 point scale ($p<.001$) and their self-efficacy increased from 8.6 to 9.3 on a 10 point scale ($p<.0001$). Post training scores were unrelated to demographic characteristics of CHAs. SMART objectives centered around publishing personal interest stories (e.g. testimonies of cancer survivors); organizing worship services that will feature a health theme in the sermon or dedicating one Sunday per month to health promotion; and presentations to inform parishioners about the study. To date, CHAs have recruited 376 participants and provided counseling to 169 participants (45%) who were non-adherent to at least one cancer screening guideline.

Discussion: Our findings suggest that African American churches and church volunteers in South LA are willing and able to promote cancer screening. CHAs with a wide range of educational and professional background achieved similar training outcomes. We will present additional results regarding changes in CHAs' knowledge and attitudes about evidence-based programs.

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B035

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MODELING THE RELATIONSHIP BETWEEN LIFE STRESS AND SICKNESS BEHAVIOR IN WOMEN WITH SUSPECTED GYNECOLOGIC CANCER

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Background: Fatigue, depression and sleep disturbance (i.e., sickness behavior) often co-occur in cancer patients. Little research has explored whether stress-related variables, such as current life stress (i.e., surgery-related distress) and past life stress (i.e., childhood trauma history) may serve as a risk factor for sickness behavior. The aim of the current analysis was to examine the association between a higher-order latent factor, sickness behavior, and additional latent factors including depressive symptoms, fatigue, sleep disturbance, and current and past stress using structural equation modeling (SEM). It was hypothesized that the stress-related variables would explain additional variance in sickness behavior.

Methods: Eligible women were scheduled to receive surgery at Moffitt Cancer Center for suspected gynecologic cancer. Participants completed a self-report questionnaire packet including demographic, clinical, and psychosocial variables, including those measuring sickness behavior (Center for Epidemiologic Studies Depression Scale, Fatigue Symptom Inventory, and Pittsburgh Sleep Quality Index) and stress-related variables (Childhood Trauma Questionnaire, Impact of Events Scale-Intrusive Thoughts). SEM was conducted using MPlus 7 to examine the associations between latent and observed variables. Nested models with and without associations between stress-related latent factors and the higher-order factor of sickness behavior were tested and evaluated for model fit.

Results: Data from 76 women were included in the current analysis (M age=59.2 years). As hypothesized, latent factors were well delineated in the analysis. Results indicated that the addition of pathways from current and past life stress to the sickness behavior factor added significant explanatory value to the model, as indicated by an improvement in model fit ($\Delta\chi^2=19.7$, $p\chi^2=306.6$, $p=.0001$; RMSEA=.071; SRMR=.087, CFI=.922).

Conclusions: Stress-related variables, including childhood trauma and surgery-related distress are associated with sickness behavior in cancer patients prior to treatment. Future research should examine potential mediators of this relationship (e.g., chronic inflammation, genetic variants). Patients with higher current and past stress may benefit from enhanced screening and early intervention to help mediate the relationship between stress and sickness behavior.

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B036

6:15 PM-7:15 PM

MULTI-LEVEL INFLUENCES ON NOT PERCEIVING FAMILY HEALTH HISTORY-TAKING AS IMPORTANT: THE ROLE OF CANCER RISK

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Introduction: Family health history assessment (FHHa) provides information about inherited cancer risk that can inform prevention efforts. Perceived importance of FHHa is likely an impetus for collecting information related to family risk. Surprisingly little research has explored levels of the socio-ecological model (SEM) to analyze and identify multi-level characteristics that may contribute to the perceived importance of FHHa in the context of cancer risk.

Methods: Using data from the 2013 Health Information National Trends survey, we tested the association of sociodemographic, family- and personal-history of cancer, and family trust and health communication with not perceiving FHHa to be very important for own health. SEM factors and importance of FHHa were tested using bivariate analyses and hierarchical regression.

Results: Of the 3,185 respondents, 32.7% reported perceiving FHHa as *not* very important for their health. Whites ($p<0.001$), males ($p<0.001$), and those born in the U.S. ($p<0.001$) were more likely to perceive FHHa as not very important. Perceived importance of FHHa did not differ between those with and without a *family* history of cancer, but did differ between those with and without a *personal* history of cancer (38.5% with personal history of cancer perceived FHHa as *not* very important vs. 31.8% without; $p=0.006$). Hierarchical regression showed no model improvement based on family or personal history of cancer adjusting for sociodemographic factors; however, individual's reported trust in family about health information and likelihood to discuss health information contributed significantly to beliefs about the importance of FHHa ($\Delta R=.10$, $p<0.001$).

Conclusion: When accounting for sociodemographic influences, family and personal cancer history were not sufficient contributors to perceiving FHHa to be important. This is concerning as such factors are critical for identifying those who would most benefit from prevention efforts. Social connection variables, however, contributed significantly to the perceived importance of FHHa. Implications of these findings for family-based health communication interventions will be discussed.

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B037

6:15 PM-7:15 PM

MULTIPLE LEVEL PERSPECTIVES REGARDING IMPLEMENTING A PHYSICAL ACTIVITY INTERVENTION TOOLKIT FOR RURAL WOMEN CANCER SURVIVORS

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Background: Physical activity can improve quality of life and reduce mortality risk for cancer survivors (CS) yet the prevalence of physical inactivity among CS is unacceptably high (87%). Our study purpose was to obtain multilevel input and priorities to inform a toolkit facilitating implementation of a physical activity intervention for rural women CS by rural organizations.

Methods: We conducted three nominal group technique meetings with rural women CS, three with community stakeholders, and one with potential interventionists. During each session, participants were asked to respond silently to one question asking what would make intervention participation (CS) or implementation (interventionists, stakeholders) doable. Responses were then shared, discussed to clarify meaning, and prioritized by group vote.

Results: The mean age of CS (n=21) was 61.2 ± 11.0 years (range 44 to 83). Most CS reported a history of breast cancer (47.4%) with the remaining reporting bladder, lung, ovarian, uterine, melanoma, or leukemia; 57.9% were early stage; 78.9% were White; 57.9% reported income under \$50,000; and mean education was 15.1 ± 2.75 years. The mean age of community stakeholders (n=16) was 49.5 ± 7.9 years, and interventionists (n=7) was 41.7 ± 15.2 years. CS generated 80 unique items, community stakeholders 96, and interventionists 32. All participants in each group endorsed a prioritized list and felt that it accurately reflected the group's discussion. The most important things for CS were "flexibility" (exercise type, intensity, schedule), "convenient location", "CS commitment", "affordability", and "access to exercise specialist". Community stakeholders prioritized "qualified exercise trainers", "convenient for CS" (time, location), "good tools for interventionists and CS communication", "physician buy-in", and "transportation assistance for CS". Interventionists thought "financial support for the program" and "committed exercise specialists" (e.g., competent, energetic) were most important.

Conclusions: Multilevel input yielded diverse strategies not possible with single level assessment. Recommended strategies reinforce the importance of multilevel implementation strategies for increasing physical activity in an underserved, at-risk population. Physical activity intervention implementation toolkits for rural women cancer survivors should include materials and guidance for implementing these strategies.

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B038

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PERCEPTIONS OF HPV VACCINE AND PREDICTORS OF VACCINE RECOMMENDATION AND INITIATION AMONG COLLEGE STUDENTS IN GEORGIA

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Background: Human papillomavirus (HPV) vaccine is recommended for prevention against several types of cancers. We assessed predictors of HPV vaccine recommendation and initiation among college students.

Methods: In 2016, 1552 women and 845 men aged 18–25 year old from 7 colleges in Georgia completed surveys. Logistic regressions stratified by sex were used to examine predictors of HPV vaccine recommendation and initiation.

Results: In our sample, 48.32% of women (n=750) and 18.82% of men (n=159) had received a doctor's recommendation for HPV vaccine. Among women, significant predictors of doctor recommendation included older age (OR=1.23), being U.S.-born (OR=2.56), and having a parent with a highest education of a bachelor's degree or above (OR=1.31). Women attending state schools had lower odds of doctor recommendation (OR=0.41). Among men, younger age (OR=0.82) was a predictor of doctor recommendation. Homosexual men had higher odds of doctor recommendation (OR=3.78) while Asian men had lower odds (OR=0.51). Additionally, 43.30% of women (n=672) and 16.69% of men (n=141) had initiated HPV vaccine. Controlling for doctor recommendation, among women, older age (OR=1.13) was a predictor of vaccine initiation. Women attending state schools had lower odds of vaccine initiation (OR=0.63). Moreover, 575 women (85.56% of initiators) and 115 men (81.56% of initiators) completed the three-dose series. Common facilitators of vaccine initiation included doctor recommendation and recommendation by parents, while barriers to vaccine initiation included lack of doctor recommendation and sexual inactivity. Participants reported low perceived susceptibility to HPV (88.49% of the sample), high perceived harmfulness of HPV (78.10%), and high perceived effectiveness of HPV vaccine (77.97%).

Conclusions: Our results highlight key points of intervention and messaging for HPV vaccine. For women, predictors of doctor recommendation were age, socioeconomic status (SES), and nativity; for men, these were age, race, and sexual orientation. When controlled for doctor recommendation, age and SES were predictors of vaccine initiation for women. These associations should be further investigated. Students reported low susceptibility and high harmfulness of HPV and high effectiveness of HPV vaccine. Doctor recommendation strongly predicted vaccine initiation and should be incorporated in interventions. Perception that the vaccine is not needed due to sexual inactivity should also be explored in depth.

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B039

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POSTMENOPAUSAL WOMEN SURVIVING BREAST CANCER: CAN PHYSICAL ACTIVITY IMPROVE QUALITY OF LIFE?

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The role that regular physical activity may have in improving health outcomes in survivors of breast cancer is receiving increased attention. The current study examines the association between physical activity and quality of life (QOL) in postmenopausal survivors of breast cancer. Mailed surveys were administered to 176 postmenopausal breast cancer survivors, and medical record abstraction was completed by the research team. The age mean of the sample was 68.5 yr ($SD=10.3$; Range=50–95 yrs.). Various forms of physical activity (i.e., aerobic, resistance) were assessed via self-reported minutes per week, and the physical, social, function, and emotional well-being QOL dimensions were assessed using the FACIT-B. Physical activity was gauged by asking participants how many minutes per week of each exercise typology they partake in on average. Analyses controlled for covariates (patient age, education, employment status, years in treatment) that were statistically significant with specific subscale(s) of interest. After controlling for these variables, vigorous activity was positively related to physical well-being ($r=.29$, $b=.21$, $p<.01$), functional well-being ($r=.31$, $b=.25$, $p<.01$), and FACT-G ($r=.21$, $b=.21$, $p<.01$), total ($r=.28$, $b=.19$, $p<.01$), and index subscales ($r=.28$, $b=.19$, $p<.01$) which are comprised of physical, functional, and breast cancer subscale scores. The combination of moderate and vigorous activity minutes per week is positively related to functional well-being ($r=.28$, $b=.20$, $p<.01$), FACT-G ($r=.17$, $b=.17$, $p<.05$), total ($r=.26$, $b=.16$, $p<.05$), and index subscales ($r=.26$, $b=.16$, $p<.05$) subscales. No significant findings were found amongst any type of physical activity with social or emotional well-being, and breast cancer subscales. The results of this study suggest that vigorous and vigorous/moderate exercise is positively associated with postmenopausal breast cancer survivors' quality of life. Breast cancer survivors who exercise more regularly are also more likely to perceive better overall functioning (e.g. sleep, work, etc.) related to the disease as well as less symptom burden (e.g. energy, nausea, pain, etc.).

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B040

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PREVALENCE AND CORRELATES OF PROVIDER RECOMMENDATIONS TO BANK SPERM AMONG ADOLESCENTS NEWLY DIAGNOSED WITH CANCER

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Purpose: Although adolescent males diagnosed with cancer may be at increased risk for infertility due to treatment, sperm cryopreservation remains underutilized. Provider recommendation (PR) to bank sperm may be particularly influential on banking outcomes in this vulnerable group. The present study examines prevalence and correlates of PR for sperm banking among adolescents newly diagnosed with cancer.

Methods: Adolescent males (N=73), parents (N=90), and providers (N=48) across eight pediatric oncology centers completed surveys within two weeks of treatment initiation which queried a variety of potential factors associated with sperm banking outcomes. Males were newly diagnosed, aged 13–21 years, at increased risk for infertility, and \geq Tanner Stage 3. Sociodemographic, medical, and psychological factors were analyzed as potential correlates of PR to bank sperm, as reported by patients. Univariate comparisons for patient and parent factors and generalized estimated equation (GEE) for management of nested provider factors were used in developing the final model which reported variables associated with PR in odds ratios (OR) and 95% confidence intervals (CI).

Results: Over half of at-risk adolescents (57.5%; n=42) reported receiving a PR to bank sperm. Preliminary analyses indicated adolescent diagnosis, parent race and anxiety, and provider confidence in fertility risk assessment, along with conviction in recommendation, significantly differentiated PR to bank sperm (p

Conclusions: Among adolescents at-risk for infertility, 42.5% report not receiving a PR to bank sperm. Compared to those diagnosed with leukemia/lymphoma, those with brain/solid tumor have significantly more time to bank prior to treatment initiation which may influence PR to bank. As banking should take place prior to the start therapy, efforts should be made to provide opportunities for in-patient collection which may increase PR in the leukemia/lymphoma group. Heightened parental anxiety and non-white race also appear to be barriers to PR for banking, suggesting that providers and institutions should have a standardized approach to recommending sperm banking among all developmentally appropriate patients.

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B041

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PREVALENCE AND PREDICTORS OF LOW SERUM 25(OH)D AMONG FEMALE AFRICAN AMERICAN BREAST CANCER SURVIVORS

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Background: African-American (AA) breast cancer (BC) survivors are prone to low serum 25(OH)D due to decreased cutaneous conversion, high levels of adiposity and BC treatment. However, previous BC investigations have failed to fully address these influential factors and have analyzed AA women in aggregate.

Objective: To determine the prevalence of low serum 25(OH)D in an exclusively AA cohort of female BC survivors with overweight/obesity, taking into account potentially important predictors not previously considered.

Design: Cross-sectional

Participants: Pre- and post-menopausal AA BC survivors (n=244) were recruited from various neighborhoods in the city of Chicago between September, 2011 – September, 2014 for a larger weight loss trial. Demographic, clinical, anthropometric [body mass index (BMI), waist (WC) and hip circumference (HC)], blood biospecimen, dietary intake [Food frequency questionnaire (FFQ)] and sun behavior data were collected by trained study personnel prior to trial participation. Dual energy x-ray absorptiometry (DXA) was used to quantify adiposity (total, %, regional, visceral) and lean mass.

Main outcome: Serum 25(OH)D

Statistical analyses: Mean (\pm standard deviation), frequencies and multivariate linear regression modeling

Results: The average participant was 57.4 (\pm 10.0) y, 6.9 (\pm 5.2) y from initial BC diagnosis with a BMI of 36.2 (\pm 6.2) kg/m². The majority of participants (60%) reported habitual oral vitamin D supplementation with mean intakes of 327 (\pm 169) IUs. Vitamin D deficiency was prevalent in 81% and 43%, applying the cut-points of the Endocrine Society (<30 ng/ml or <75 nmol/L) and the Institute of Medicine (<20 ng/ml or <50 nmol/L), respectively. Linear regression modeling revealed that dietary vitamin D supplementation positively predicted serum 25(OH)D levels, while darker skin pigmentation and WHR negative predicted serum 25(OH)D levels (p<0.01; adjusted R² 0.2877), after controlling for age, BC stage, energy intake and seasonality of blood draw. No significant associations were detected for BMI or any DXA measures of body composition.

Conclusions: Considering the number of women endorsing the use of vitamin D supplementation, the prevalence of vitamin D deficiency among these AA BC survivors was high. Vitamin D supplementation, sun behaviors and WHR may serve as future points of intervention to improve the vitamin D status of this minority survivor population.

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B042

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QUALITY OF LIFE AND CANCER SURVIVORSHIP CONFIDENCE IN WOMEN ENDING TREATMENT FOR BREAST CANCER

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Within the U.S., the number of cancer survivors will increase by 14.5 million to approximately 19 million by 2024. The Institute of Medicine, the American Cancer Society, along with other cancer care accrediting institutions, encourage oncology care providers to craft Survivorship Care Plans for every patient ending treatment for cancer. These types of requirements echo the increasing awareness that planning for, and addressing, cancer survivorship is an important piece of the puzzle that is cancer treatment. Patients vary in their confidence to handle new cancer-survivor life, along with all the challenges it can bring. As part of an ongoing RCT examining the impact of Breast Cancer (BC) survivorship planning on confidence for survivorship and Quality of Life (QOL), we are presently examining the relationships between confidence and QOL in women ending treatment for BC, prior to receiving any survivorship care planning. Patients were given the Confidence in Survivorship Information (CSI) and the City of Hope QOL scale at the end of their treatment for breast cancer, but prior to receiving cancer survivorship plan. The QOL has four subscales: 1) physical symptoms, 2) psychological well-being, 3) social well-being, and 4) spiritual well-being. Subscales scores range from 0–10, with higher scores indicating better functioning. The CSI provides an overall confidence scale and subscales for confidence in knowledge of 1) treatment, and 2) prevention and late-effects. Scores for the CSI range from 1–3, with higher scores indicating greater confidence. Patients (n=64) were non-metastatic, predominantly White (94%) and married (61%), with a relatively high education level (61% 4-year college degree or beyond) and a mean age of 60 years old. Most patients had been diagnosed within 9 months (94%) and were diagnosed with stage 1 or 2 (77%). Women reported good functioning regarding physical symptoms (x=7.71; SD=1.23), psychological well-being (x=6.58; SD=1.58), social concerns (x=7.00; SD=1.76) and spiritual well-being (x=6.20; SD=2.15). The overall average for the CSI was 2.35 (.43), and the subscales were 2.85 (.24) and 2.17 (.53), respectively. Better overall confidence was significantly correlated with less physical problems (r=.41), better psychological well-being (r=.52) and less social concerns (r=.27). Results will be discussed related to the larger project's goals and baseline status of women who have yet to receive survivorship planning for breast cancer.

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B043

6:15 PM-7:15 PM

RELATIONSHIPS BETWEEN PHYSICAL SYMPTOM MANAGEMENT AND PSYCHOLOGICAL MORBIDITY IN TRANSITIONING CANCER SURVIVORS

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Introduction: Cancer survivors frequently struggle with physical symptoms that accompany or exacerbate emotional distress when transitioning out of primary cancer treatment. Interventions that build self-efficacy for managing physical symptoms through self-management and cancer rehabilitation referrals may improve distress. This study assessed how self-efficacy in managing physical symptoms relates to psychological wellbeing.

Methods: Data were from the American Cancer Society's Cancer Survivor Transition Study, which surveyed breast, prostate, and colorectal cancer survivors within their first-year post-treatment. A modified Memorial Symptom Assessment Scale was used to assess the presence (past-month) and self-efficacy for managing 8 physical symptoms: pain, fatigue, numbness or tingling, shortness of breath, diarrhea/IBS/problems holding bowels, incontinence or problems with urination, lymphedema, and problems with sexual interest or activity. Mean self-efficacy scores (range 0–4; higher scores=less symptom management self-efficacy) and were regressed on a CES-D scale for depressive symptomatology (yes/no) and a 5-item Fear of Relapse/Recurrence scale (range=0–100; higher scores=more fear). Covariates included demographics, medical characteristics, psychosocial variables and perceived quality of care.

Results: Survivors (N=871) reported experiencing an average of 4.45 physical symptoms (SD=2.07) over the past month; symptom management self-efficacy was high (M=1.10; SD= 0.86). Levels of depressive symptomatology (17%; N=150) and fear of recurrence (M=33.51; SD=21.33) were similar to other studies. Multivariable model results indicated that those who were less confident in managing their physical symptoms were more likely to report higher odds of depressive symptomatology (OR=1.79; 95% CI=1.40, 2.29) and elevated fear of recurrence (B=3.69; 95% CI=2.08, 5.31).

Implications: Few interventions targeting psychosocial distress in cancer survivors involve building physical symptom management skills or physical rehabilitation referrals. Increasing cancer survivors' confidence for symptom management or referring them to rehabilitation may be an avenue for decreasing their psychological comorbidity. Longitudinal studies should be used to further investigate the causal relationship between physical symptom management and emotional distress.

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B044

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SCREENING AND MELANOMA PREVENTIVE BEHAVIORS AMONG CHILDREN AT ELEVATED RISK FOR MELANOMA

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Melanoma is the most deadly form of skin cancer. Screening through skin self-exams (SSEs) could aid in early detection, when treatment is more effective. Regular SSEs with the help of parents or caregivers could help children establish habits around regular screening and facilitate future early detection of melanoma. There have been few studies examining frequency of SSE among children who have a family history of melanoma, as well as whether SSE implementation is related to other melanoma preventive behaviors, such as sunscreen use. The goal of the current study was to examine the frequency of children's implementation of SSE, and potential relationships between SSE frequency and other melanoma preventive behaviors among children ages 8–17 at elevated risk for melanoma due to family history of the disease. Children ($n=63$) and their parents ($n=69$) were asked to complete a questionnaire that included items on self-reported frequency of engagement in melanoma preventive and screening behaviors. SSE behaviors were dichotomized into one time per month (the recommended SSE frequency) vs. all other frequencies of occurrence. Correlational analyses were conducted to examine potential associations between implementation of melanoma preventive behaviors (wearing sunscreen, protective clothing, hats and sunglasses, and avoiding peak hours of ultraviolet radiation exposure 10 am–4 pm) and child age, gender, and family income. Logistic regression analyses were performed to identify whether performing monthly SSE predicted implementation of melanoma preventive behaviors. The vast majority of parents (90%) and children (86%) reported that children engaged in SSE some amount other than the recommended one time per month. Parents reported that their children engaged in SSE less (74%) or more (16%) than once per month. Children report that they performed SSE less (53%) or more (33%) frequently than one time per month. There were no significant associations between children's SSE frequency and their reported engagement in any melanoma preventive behaviors (p 's = .20-.96). Even among children at elevated risk for melanoma, the majority are not performing monthly SSE. A third of children reported performing SSE more frequently than one time per month, indicating a potential need to understand factors that may lead to overscreening, such as anxiety, or a need to clarify understanding about what constitutes SSE. Future studies could examine potential barriers to SSE implementation in this population (e.g., lack of knowledge, children unwilling to participate in SSEs). Interestingly, SSE implementation was not correlated with engagement in melanoma preventive behaviors. These findings suggest that interventions to promote engagement in melanoma prevention and screening behaviors may require targeted strategies for screening, separate from those for preventive behaviors.

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B045

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SOCIAL CORRELATES OF MENTAL HEALTH IN ADVANCED GASTROINTESTINAL CANCER PATIENTS AND THEIR FAMILY CAREGIVERS

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Few studies have investigated theory-driven factors underlying the impact of social relationship qualities on mental health in cancer patient-caregiver dyads. Guided by social-cognitive processing and loneliness theories, the present study investigated the degree to which loneliness mediated the effects of negative (social constraints) and positive (emotional support) relationship qualities on the global mental health of advanced gastrointestinal (GI) cancer patients and their family caregivers.

Participants ($N=50$ dyads) were recruited from an academic cancer center. Patients and caregivers completed measures assessing social constraints (e.g., avoidance, criticism) from the other dyad member, emotional support from others, loneliness, and global mental health. Patients were predominantly male (62%) and Caucasian (86%), with an average age of 58 years ($SD=11.5$). Common diagnoses were colorectal (38%) and pancreatic (26%) cancer. Caregivers were predominantly female (66%) and spouses of the patients (76%), with an average age of 54 years ($SD=13.7$).

Structural equation modeling was used to examine individual models, and Actor-Partner Interdependence Mediation Modeling was used to test dyadic models. Individual path analyses for patients and caregivers demonstrated that emotional support had an indirect effect on mental health through loneliness ($B=.32$, 95% CI [.11, .52]; $B=.30$, 95% CI [.11, .49] for patients and caregivers, respectively), but no associations were found between social constraints and mental health. Dyadic analyses also indicated that each person's perceptions of emotional support were indirectly associated with their own mental health via loneliness ($B=.33$, 95% CI [.08, .58]; $B=.29$, 95% CI [.14, .47] for patients and caregivers, respectively). However, each person's loneliness and mental health were unrelated to their partner's emotional support and loneliness ($Bs=-.18$ to .15).

Findings suggest that for advanced GI cancer patients and their caregivers, emotional support from others alleviates feelings of loneliness, which may lead to better mental health. However, the benefits of emotional support appear to be primarily intrapersonal rather than interpersonal in nature. Additionally, participants endorsed low levels of social constraints, which may explain their lack of relation to loneliness and mental health. Continued study of interdependence in social processes between cancer patients and caregivers will inform intervention development.

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B046

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THE ELECTRONIC SOCIAL NETWORK ASSESSMENT PROGRAM: FEASIBILITY AND PRELIMINARY EFFICACY

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Background: Family caregivers of patients with primary malignant brain tumor (CGBT) are at high risk for caregiver burden and distress because of the unique demands associated with the disease. Social support can be a protective factor against burden and anxiety, but barriers prevent CGBTs from seeking support from their networks. Our team developed the electronic Social Network Assessment Program (eSNAP), a visualization tool to help CGBTs catalogue, organize, and prime their social network resources.

Our goal was to test the feasibility of implementing eSNAP in a neuro-oncology clinic and assess the preliminary efficacy of eSNAP in reducing caregiver burden and anxiety and increasing the perceived amount of network support.

Methods: CGBTs were recruited from a neuro-oncology clinic at an NCI-designated comprehensive cancer center. Recruitment rates were assessed. Participants completed baseline questionnaires assessing their demographic characteristics, burden, anxiety, and perceived amount of network support. Participants were then randomly assigned (2:1) to either create a social network visualization using eSNAP or to a usual care (control) condition. Those who used eSNAP provided likeability/usability data and open-ended feedback. All participants were asked to complete follow up questionnaires 3 weeks later on burden, anxiety, and support. Analyses compared difference scores (baseline to 3-week assessment) between groups.

Results: 38 CGBTs were enrolled. Participants were mostly non-Hispanic White (92%), female (77%), spouses of patients (77%), with mean age 57 years ($SD=12$). The recruitment rate was 85% and study retention at 3 week follow-up was 85%. Participants who received eSNAP overwhelmingly reported high likeability and usability. However, 67% wanted/needed more time with eSNAP than available in clinic. Thus, we compared controls ($n=9$) to eSNAP completers ($n=10$) and non-completers ($n=19$). There were no baseline differences. Completers had significantly reduced burden at 3 weeks vs. controls ($p=.02$). Promising trends existed for anxiety and support.

Conclusions: eSNAP was feasible to implement, although limiting use to the clinic prevented engagement and benefit. Preliminary outcome data suggests that for CGBTs who completed use, eSNAP may be effective in reducing caregiver burden and anxiety and increasing the perceived amount of network support. Further research is planned to increase CGBT eSNAP engagement, including continued access at home.

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B047

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THE ROLE OF COPING AS A MEDIATOR IN THE RELATIONSHIP BETWEEN ILLNESS PERCEPTIONS AND ANXIETY IN CANCER PATIENTS

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Background: Anxiety is a common psychological outcome reported by cancer patients (Jensen et al., 2011). Research suggests that the ways in which cancer patients interpret their cancer experience can impact how they cope, which in turn can impact psychological outcomes, including anxiety (Bower et al., 2006; Holzner et al., 2003; Tehekmedyan, Kallich, McDermott, Fayers, & Erder, 2003). One model which allows us to examine the relationship between illness perceptions, coping, and anxiety in cancer patients is Leventhal's Common Sense Model (CSM; Leventhal, Meyer, & Nerenz, 1980). Using Leventhal's CSM, this study examined the indirect effect of positive and negative forms of coping on the relationship between seven illness perceptions (i.e., illness identity, chronicity, cyclicity, consequences, personal and treatment controllability, and coherence) and anxiety in patients with ovarian cancer.

Method: Ovarian cancer patients were recruited from the Princess Margaret Hospital in Toronto ($N=283$), and completed the following questionnaires: Illness Perception Questionnaire-Revised (Moss-Morris et al., 2002); Brief-COPE questionnaire (Carver, Scheier, & Weintraub, 1989); State-Trait Anxiety Inventory-State Subscale (Spielberger, 1983); Brief Pain Inventory (Cleeland & Ryan, 1994); and Functional Assessment of Chronic Illness Therapy Fatigue Scale (Cella et al., 2005). Controlling for three factors associated with anxiety: age, pain and fatigue severity, seven separate multiple mediation analyses were conducted to examine the indirect effect of each illness perception on anxiety severity through the use of positive or negative coping strategies.

Results: Indirect effects analyses revealed that greater negative coping indirectly accounted for greater anxiety in individuals who endorsed greater cyclicity, $\beta = .25$, $SE = .11$, 95% Bca CI [.065, .485], and consequences associated with their cancer, $\beta = .19$, $SE = .09$, 95% Bca CI [.028, .379]. While in contrast, less negative coping indirectly accounted for reduced anxiety in individuals who endorsed greater treatment control, $\beta = -.27$, $SE = .13$, 95% Bca CI [-.558, -.036], and illness coherence, $\beta = -.48$, $SE = .11$, 95% Bca CI [-.736, -.281].

Discussion: This is the first study to examine the full array of Leventhal's illness perceptions in association with anxiety, using coping strategies as mediators. The results from this study indicate that negative coping strategies may be an important mechanism through which illness perceptions impact anxiety outcomes in ovarian cancer patients. These data provide support for the utility of Leventhal's CSM in understanding anxiety in cancer patients, and reveals two modifiable factors that may be addressed through psychosocial therapies to reduce anxiety—illness perceptions and coping strategies.

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B048

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UNDERSTANDING HCT CAREGIVERS' PREFERENCES FOR A MINDFULNESS-BASED STRESS MANAGEMENT PROGRAM

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Caregivers of allogeneic hematopoietic cell transplant (HCT) patients have significant responsibilities including 24 hour availability to care for the patient, ability to administer oral and IV medications, strict hygienic precautions and food prep rules, and identification of early infections, over and above the emotional stress associated with caring for someone with a serious illness. This stress can impact caregiver psychological health, which has implications for patient care. Mindfulness-based programs have been shown to decrease stress and increase positive affect among various populations, although no such programs have been tailored for HCT caregivers to date. The goal of this study was to gain insight into caregivers' experiences with mindfulness and evaluate receptiveness to a mindfulness-based stress management program to be implemented during the acute transplant period. Semi-structured phone interviews were audio-recorded and lasted 26–83 minutes. Verbatim transcripts were prepared for thematic content analysis using the constant comparative method. Caregivers ($n=15$; 53% female) were 1–3 years post-patient transplant with a mean age of 61.8 ($SD=8.16$). Forty-seven percent reported hearing of mindfulness before, and when asked “what mindfulness means [to them]” participants commonly offered themes of awareness, focus/paying attention, and how you relate to something (other people, emotions, situations). Despite this, only 21% indicated practicing anything related to mindfulness ever in their lifetime. When a description of a proposed, tailored mindfulness program was provided (e.g., informal mindfulness practices, formal meditation), the majority (80%) indicated that they would have engaged in such a program and believed it would have been useful for them in managing stress. The majority (80%) preferred to receive the program in-person, about once per week, and with sessions lasting no longer than 1 hour. Some participants (53%) indicated interest in a mobile component (e.g., text reminders, meditations on phone, materials available on website). A little more than half of participants (53%) preferred the program to extend from the initial hospitalization period through 90 days post-discharge. Findings suggest HCT caregivers are aware of and open to mindfulness, and that they believe such a program would be beneficial to manage their stress. Additionally, participants provided useful guidance on how to best tailor a mindfulness program to reduce stress in HCT caregivers.

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B049

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WHAT DO WOMEN WANT? PANEL BASED GENETIC TESTING PREFERENCES IN WOMEN AT INCREASED RISK OF OVARIAN CANCER

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BACKGROUND: Panel-based genetic testing (PBGT) is becoming increasingly prevalent in clinical practice, but little is understood about information preferences and impact of results. PBGT groups similar genes and involves results of varying significance, including only a small proportion of medically actionable results. A greater understanding is essential to the development of genetic testing guidelines specific to PBGT, along with educational materials and decision support tools for patients and providers. This mixed-methods study explored PBGT preferences of participants with a first-degree relative who has died from ovarian cancer. The specific aims were to understand the patient preferences for PBGT results in this population, the factors that may influence information preferences, and the values, beliefs, and attitudes when receiving PBGT information.

METHODS: We conducted a cross-sectional survey of self-referred unaffected women in Ontario, Canada who have at least one first-degree relative with ovarian cancer and who are undergoing PBGT through a clinical research study. Participants had the option to receive genes (A) BRCA1/2, (B) associated with ovarian and other cancers (C) that are thought to increase the risk of ovarian and other cancers (D) that are known to increase the risks of other cancers (but not ovarian). Quantitative data were collected using a web-based survey platform. Using bivariate analysis and logistic regression, we determined the relationship of sociodemographic and psychological factors (anxiety, depression, decisional conflict) with the genetic information preferences. We also conducted semi-structured telephone interviews with 20 participants who were purposively sampled based on their diverse panel choice selection. Transcripts were analyzed using conventional content analysis.

RESULTS: 350 women participated in pre-genetic counseling and consented to which results they would like to receive. Most women were married (84%), had a post-secondary education (80%), had one relative with ovarian cancer (90%), and chose to receive information from all panels (84%). Those with more decisional conflict did not want to receive genetic information from all panels. Interviews revealed that participants appreciated all forms of “knowledge” regarding their genetic risk, and that many contemplated participation in the program but once committed did not truly consider what information they preferred to receive.

CONCLUSION: In our sample, most women opted to select all panels for PBGT, including panels without actionable results. This preference was associated with a higher level of decisional conflict. Our findings have important implications for the advancement of PBGT in screening for ovarian cancer.

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B050

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WHEN A HELPING HAND HURTS: NEGATIVE EFFECTS OF SOCIAL RELATIONSHIPS ON PSYCHOLOGICAL ADJUSTMENT IN PARENTS OF AYAS WITH CANCER

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Background: Parents of adolescents and young adults (AYAs) diagnosed with cancer are often primary caregivers for their children, requiring social support themselves as they cope with this family stressor. According to Lepore’s social-cognitive processing model, those facing stress need to process their feelings in an interpersonal context in order to adjust to the stressor. However, not all social relationships yield beneficial effects; sometimes network members present constraints on disclosure through negative comments or non-verbal behaviors, which in turn may be related to more distress. Some studies suggest that the negative aspects of social relationships are stronger predictors of distress than positive aspects, while other research suggests that social support and constraints may have both direct and interactive effects.

Aims: 1) To describe levels of psychological distress experienced by parents of AYAs with cancer; 2) To examine the direct effects of social support and social constraints on psychological distress; and 3) To test whether social support moderates the negative effects of social constraints on psychological distress.

Method: Data were collected through an online survey of 71 parents (66 mothers, 5 fathers) of AYAs (aged 15–39) diagnosed with cancer. Psychological distress was assessed using validated measures of depressive symptoms (PHQ-9), anxiety (GAD-7), and post-traumatic stress (IES-R). Social relationship variables were measured with the Contextual Illness-Specific Support Scale (CISS) and Lepore’s Social Constraints Scale (SCS). Multiple regression analyses tested the aims.

Results: Although 14% of parents reported moderate to severe anxiety ($M = 5.8$; $SD = 5.1$), 30% reported moderate to severe PTS ($M = 23.7$; $SD = 19.0$), and 32% reported moderate to severe depressive symptoms ($M = 6.4$; $SD = 6.5$). Social support significantly predicted depressive symptoms ($p = .02$), but not anxiety or PTS, whereas social constraints significantly predicted all three distress outcomes (all $p < .001$). Social support did not moderate the relationship between social constraints and anxiety, PTS, or depressive symptoms.

Conclusion: Among parents whose AYAs have cancer, the negative aspects of social relationships on psychological adjustment may outweigh the positive ones. Future psychosocial interventions for caregivers may benefit from including skills-based work on bettering effective communication in social interactions between network members to minimize social constraints.

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B051

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ASSESSING UTILITY OF A BEHAVIOR BASED TOOL IN THE CLINICAL SETTING AS A PRIMORDIAL PREVENTION STRATEGY: THE HEALTHY HEART SCORE

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Created by the Harvard T.H. Chan School of Public Health, the Healthy Heart Score is a previously validated online risk calculator that determines 20-year Cardiovascular Disease (CVD) risk based on nine modifiable lifestyle factors including smoking habits, BMI, physical activity, alcohol consumption, and a diet score. Although previous research has shown that the Healthy Heart Score is associated with development of the clinical risk factors, it remains unknown if the tool can be used as a primordial prevention strategy to stimulate the conversation between patient and healthcare provider about lifestyle modification. Knowing that providers have limited time to assess lifestyle factors, we conducted a qualitative study among health providers and patients to better understand their thoughts about the feasibility and barriers of implementing the Healthy Heart Score in the clinical setting.

A purposive sample of 20 people with no self-reported CVD diagnoses (mean age = 33, 70% female) and 20 health care providers (20% physician/physician assistant, 35% nurse, and 45% dietitian) took the risk assessment and participated in semi-structured interviews. Questions were asked regarding CVD primordial prevention, opinions of the tool, and utility in the clinical setting. Three researchers independently coded the transcribed interviews, discussed codes to resolve discrepancies, and agreed on common themes. Participants suggested ways to best utilize the tool with the most prominent theme being “use in waiting room”. Participants also stated ways to improve the tool, including adding graphics for visual reference of serving size, and removing irrelevant food choices such as “germ”. Most participants said that the overall length was acceptable for use in the clinical setting. Patients showed interest in CVD primordial prevention and expressed willingness to take the Healthy Heart Score prior to seeing a primary care provider. Providers said they would be willing to use the tool in their practice, and all said they would recommend it to their patients. Providers stated few barriers to using the tool with the most common theme being “patient lack of compliance” in follow-through with behavior change. Our findings support the utilization of the Healthy Heart Score as a CVD primordial prevention tool in the clinical setting. Additional research implementing the tool into the clinical setting will provide deeper insight into how the tool can impact behavior change.

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B052

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ASSOCIATION OF EPICARDIAL FAT WITH PRECLINICAL CARDIOVASCULAR AND METABOLIC FUNCTION

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Background: Increased levels of visceral and epicardial fat depots are associated independently with increased risk of cardiovascular and diabetic disease pathophysiology. However, little is known about the synergistic relationships of these depots in preclinical cardiometabolic risk in healthy populations. Accordingly, the purpose of the present study was to evaluate whether indices of visceral and epicardial fat are additive or interactive in their relationship with markers of sub-clinical cardiometabolic disease.

Methods: The study assessed 339 adults (48% women) without diagnosed cardiovascular disease, diabetes, or other systemic conditions. Visceral fat was estimated using waist girth (WG). In addition, epicardial adipose tissue (EAT) thickness was measured via 2D-guided M-mode echocardiography. Hierarchical multiple regression was employed, evaluating WG, EAT, and their interaction term in relation to traditional cardiometabolic measures (i.e., blood pressure, left ventricular mass index, lipid profile (total (TC), LDL- and HDL-cholesterol levels, TC/HDL, and triglycerides), fasting glucose and insulin, insulin sensitivity assessed by euglycemic-hyperinsulinemia clamp, and proinflammatory markers (CRP, IL-6).

Results: The analyses showed the expected independent associations of WG and EAT with outcome measures. Notably, only the lipid parameters showed evidence of significant WGx EAT interactions [TC/HDL ratio ($B = -5.61e-5$, $p < .01$), LDL ($B = -.013$, $p < .01$), and triglycerides ($B = -7.21e-5$, $p < .05$)]. Therefore, for each lipid measure, the relationship between WG and lipid levels depended on EAT. Specifically, when EAT was low, increasing WG was linked with increasing dyslipidemia. However, when EAT was high, WG was not associated with dyslipidemia. In this instance, lipid levels were elevated regardless of prevailing WG. Thus, with increasing EAT, EAT was a stronger indicator of dyslipidemia than WG.

Conclusion: The study findings indicate that the relationship of visceral adiposity to dyslipidemia was dependent on EAT. Thus, consideration should be given to the interaction of both of these measures of fat deposition when assessing preclinical alterations in lipid profile. Further, research is needed to elucidate the mechanisms underlying the contribution of epicardial fat accumulation to dyslipidemia.

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B053

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COGNITIVE FUNCTION IN THE ELDERLY IS ASSOCIATED WITH CELLULAR INFLAMMATION REGULATION AND PHYSICAL FUNCTION.

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Chronic inflammation, even at low grade, is associated with impaired cognitive function in various populations, but the literature remains inconsistent in the relationship between blood levels of inflammatory markers and mild cognitive impairment. Hypertension has also been associated with cognitive impairment, and it is unknown whether dysregulated beta-adrenergic control of inflammatory processes is a mechanism of cognitive impairment in individuals with hypertension. Furthermore, signs of diminished physical functioning and mild cognitive impairment have been linked, especially in aging populations. We aimed to investigate these relationships by examining cognitive and physical functioning in relation to cell-based inflammation regulation in elderly individuals. The current study includes baseline data from older adults with hypertension ($n = 62$; 64.5% female, mean age = 73.5, SD = 8.54) participating in a behavioral intervention study. Cognitive function was assessed via the 30-item Montreal Cognitive Assessment (MoCA), and mobility was assessed using the Timed Up & Go Test (TUG). Beta-adrenergic receptor-mediated inflammation control (BARIC) was quantified by stimulating immune cells *in vitro* with an endotoxin, lipopolysaccharide, while simultaneously administering a dose response to beta-agonist, isoproterenol, for monocyte-produced cytokine (TNF- α) expression. Cognitive function (MoCA: mean = 24.8, SD = 4.12) was considered impaired in 24% of participants ($n = 15$; MoCA ≤ 23) and was associated with age ($\beta_{std} = 0.24$, $t = 2.74$, $p = 0.008$), but not with body mass index (BMI) or gender. According to the CDC guidelines, mobility was within a normal range across the sample (TUG: mean = 9.17 s, SD = 3.15 s), although 22.5% of participants exhibited diminished mobility ($n = 14$, TUG ≥ 12 s). Multivariate linear regression modeling indicated that reduced BARIC and TUG were predictive of diminished cognitive function after controlling for age, gender and BMI (BARIC: $\beta_{std} = 0.21$, $t = 2.57$, $p = 0.013$; TUG: $\beta_{std} = 0.30$, $t = 3.37$, $p = 0.001$). Our findings indicate that impaired inflammation regulation and diminished physical functioning may predict reduced cognitive function among the elderly. The impact of inflammation and physical functioning on cognition in the elderly will be further clarified in future longitudinal analyses of this ongoing investigation.

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B054

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EFFECTS OF DEVICE-GUIDED BREATHING ON BP ARE RELATED TO REDUCED BREATHING RATE DURING PRACTICE NOT THE BREATHING TARGET RATE

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Device-guided breathing (DGB) refers to an intervention using a device that generates guiding tones (signals to inhale and exhale) to pace the breathing by gradually prolonging exhalation and slowing the breathing rate. The impact of DGB on blood pressure (BP) has been studied in previous studies, but the mechanisms are not well understood. One explanation proposed is that achieving the target breathing rate of 5–6 breaths per minute (bpm) is the key to BP change, as the Reflex Sinus Arrhythmia (RSA) is maximized and changes blood pressure by resetting the cardiac baroreflex. Others propose that the effect of the breathing practice is a non-specific relaxation response, and other ideas have been advanced.

In a recent randomized controlled trial (RCT), we studied the effects of 8 weeks of DGB (15 min/day) with 2 targets for the respiration rate (RR) (5 bpm – the standard device setting- and 14 bpm – intended as a relaxation control) on ambulatory blood pressure (ABP) in medicated but uncontrolled hypertensives ($n=254$), compared to a usual care (UC) control. Contrary to hypotheses, both DGB groups significantly reduced ABP vs the UC control and were not different from each other. The purpose of the present analyses was to explore data from the RCT stored automatically by the DGB devices (RESPeRate™) to shed light on the elements of the performance of daily practice sessions that led to reductions in systolic ABP.

The device data showed that both DGB groups practiced consistently (mean >70% of daily sessions, 98% did the pre-set 15 min. practice sessions) with good compliance toward the target RR goals. Using multilinear regression models the Change in Systolic BP in the DGB_5 group was found to increase linearly with baseline SBP and the mean change from the beginning respiration period (=60/RR) to the end of the practice sessions ($R = 0.46$, $p=.00005$). In DGB_14 the change in systolic BP increased with age and change in respiration period ($R=.053$, $p=.003$). Interestingly, the initial mean breathing rates were important in the DGB_14 group, in that SBP only decreased in those whose initial breathing rates were >14, who actually reduced their breathing rates during the DGB_14 practice. The degree of synchronization with the guiding tones appears to be the driver of slowing the breathing, as it predicted the increase in the respiration period and the end respiration rate ($R=.93$, $p<.00001$ for DGB_5; and $R=.78$, $p<.0002$ for those in DGB_14 who slowed their breathing). Thus it appears that it is the practice with reducing breathing rate, regardless of the target RR, that predicts the reduction of systolic BP, arguing against the importance of the 5–6 bpm breathing target to BP outcomes.

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B055

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FEARS OF THE UNKNOWN AND BODILY SENSATIONS PREDICT PATIENT REPORTED CARDIAC SYMPTOMS IN ATRIAL FIBRILLATION PATIENTS

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Background: Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia with a one in four lifetime risk in adults over the age of 40. Given the progressive demographic aging of the US population, AF represents a significant public health threat associated with increased morbidity, impaired quality of life (QOL), and significant health care costs. Medical management of AF is complicated by an inconsistent relationship between observed arrhythmias and patient-reported cardiac symptoms. Because symptoms drive QOL and health care use, it is important to understand how psychosocial factors influence patients' illness experience. We examined the impact of two potentially important cognitive processes, intolerance of uncertainty and fear of somatic complaints, on patient reports of AF symptom frequency.

Methods: AF patients (N=101, 46% male, mean age=71) recruited from an outpatient cardiology clinic completed questionnaires on Anxiety Sensitivity, Intolerance of Uncertainty, QOL (SF-12), AF Symptom Frequency (difficulty breathing, racing heart, chest pain, dizziness, dyspnea, exercise intolerance), and health care use. Data were analyzed by 1) correlating AF symptoms with QOL and health care use and 2) regressing AF symptoms on age, gender, anxiety sensitivity, and two reactions to uncertainty (inhibition due to uncertainty and fear of uncertainty). Both main effects and interactions were examined in separate steps.

Results: AF symptom frequency was correlated with lower physical QOL, $r = -.56, p < .001$, mental QOL, $r = -.43, p < .001$, and more physician contacts, $r = .23, p = .023$. Multiple regression analysis showed that AF symptom frequency was related to age, $\beta = -.20, t = -2.56, p = .001$, anxiety sensitivity, $\beta = .36, t = 3.48, p < .001$, and inhibition due to uncertainty, $\beta = .40, t = 3.54, p < .001$, but not gender, $\beta = -.02, t = -0.23, p = .819$. A significant interaction effect indicated that patients reporting both heightened anxiety sensitivity and greater behavioral inhibition due to uncertainty reported more frequent AF symptoms, $\beta = .47, t = 2.46, p = .016$.

Conclusions: AF patients with fear of somatic sensations and uncertainty reported more frequent AF symptoms. While establishing a causal relationship between AF symptoms and these factors is beyond the scope of this study, the findings suggest novel opportunities to improve AF patient care and quality of life by targeting intolerance of uncertainty and fear of somatic complaints in AF patients when cardiac symptoms persist in spite of empiric medical therapies.

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B056

6:15 PM-7:15 PM

LENGTH OF U.S. RESIDENCE AND OBESITY IN THE HISPANIC COMMUNITY HEALTH STUDY/STUDY OF LATINOS

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Obesity among immigrant Hispanic/Latino adults in the U.S. increases with greater length of U.S. residence. Exposure to U.S. culture is hypothesized to lead to more obesogenic health behavior, thereby increasing body mass index (BMI) over time. Longer length of residence has been shown to lead to health behavior changes towards unhealthful diet and increased sedentary time. However, the association between obesity and post-immigration diet and sedentary health behaviors in relation to length of residence has not been studied in a representative sample of U.S. Hispanic/Latino immigrants. This study examined length of residence and sex in the relationship between Alternative Healthy Eating Index-2010 (vegetables, whole fruit, whole grains, trans fat, alcohol, etc.) composite-measured diet or accelerometer-measured sedentary health behaviors with BMI in a representative sample of U.S. Hispanic/Latino immigrants and nonimmigrants.

13,962 (80.2% foreign born) participants in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL) aged 18–60 from 4 U.S. cities (Bronx, NY; Chicago, IL; Miami, FL; San Diego, CA) underwent standardized interviews and physical examination. Linear regression analyses, adjusted for nativity, age, income, Hispanic/Latino background, HCHS/SOL site, and tobacco use, were conducted to examine the relationships between diet and BMI, and sedentary time and BMI. Length of U.S. residence and sex were examined as moderators, and three-way interactions (diet length of residence sex; sedentary time length of residence sex) were tested in models that contained main effects and two-way interactions. HCHS/SOL design, stratification, and clustering weights were applied to all models. The diet length of residence sex interaction was significant ($b = .005, 95\% \text{ CI} = .003, .008$). More unhealthful diet was associated with higher BMI among those with longer length of residence, up to 15 years post immigration. Stratification by sex showed that the strongest diet-BMI relation was observed among U.S.-born women, and that the diet-BMI relationship among foreign-born women increased in magnitude and approximated that of U.S.-born women with greater length of residence. Prevention programs aimed at promoting healthy weight and reducing excessive weight gain in Hispanic/Latino immigrants in the U.S. via changes to healthful diet should consider length of residence and sex, and be delivered within the first few years of arrival.

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B057

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TESTING PSYCHOSOCIAL PATHWAYS OF SOCIAL SUPPORT TO PREDICT 5-YEAR MORTALITY RISK IN CONGESTIVE HEART FAILURE PATIENTS

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Congestive heart failure (CHF) impacts more than 5 million people in the U.S., approximately three-quarters of whom are over age 65 (American Heart Association, 2014). Mortality rates in CHF patients are extremely high, and represent a major target of medical and psychosocial interventions. Although considerable research has shown the importance of social support resources for maintaining quality of life with CHF, social support has demonstrated inconsistent effects on mortality (e.g., Murberg & Bru, 2001). However, few studies have compared distinct pathways through which social support resources may be helpful (i.e., instrumental vs. emotional support). Previous research on this sample also showed that spiritual peace promoted longevity (Park et al., 2016), and so we were curious as to whether this might be one possible pathway through which social support impacts mortality. To better understand the ways in which social support influences the mortality of CHF patients, an examination of both direct and indirect effects is needed.

In the present study, we examined relationships between social support resources (ESSI; Vaglio et al., 2002), use of instrumental and emotional support coping (Brief COPE; Carver, 1997), health behaviors (items from Sherbourne et al., 1992), spiritual peace (FACIT-Sp-12; Peterman et al., 2002), and mortality in a sample of 191 CHF outpatients (64% male, mean age= 68.6, 83.2% White). Psychosocial data were collected at two time points, each 6 months apart. Mortality data were collected from medical records at a 5-year follow-up.

Sixty-one participants (32%) were deceased by the 5-year follow-up. Controlling for demographic factors and comorbid conditions, social support at T1 demonstrated only a marginal effect on mortality risk (HR = 0.73, $p = .05$, 95% CI[0.53, 1.00]). Social support was also prospectively associated with instrumental coping ($\beta = 0.32$), emotional support coping ($\beta = 0.60$) and spiritual peace ($\beta = 0.24$) (all $ps < .01$), but not health behaviors ($\beta = 0.11$, $p = .20$) at T2. Further, spiritual peace predicted decreased mortality risk (HR = 0.53, $p < .01$, 95% CI[0.35, 0.80]) and served as an indirect pathway through which social support impacted longevity (40% of total effect mediated, $p < .05$). Health behaviors also predicted decreased risk of mortality (HR = 0.40, $ps > .20$).

These results suggest that social support in CHF patients may be protective through its effects on spiritual peace, but does not impact mortality via coping or health behaviors. This has important implications for interventions to promote perceptions of social support in CHF patients, especially for those experiencing high levels spiritual distress related to their health. Further, given the clear value of practicing health behaviors in addition to maintaining spiritual well-being, programming for CHF caregivers should emphasize strategies for helping patients with daily health-promoting behaviors.

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B058

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THE RELATIONSHIP BETWEEN SEDENTARY BEHAVIORS AND CARDIOVASCULAR DISEASES: A MULTIPLE MEDIATION MODEL

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Sedentary behaviors, physical activity, and fat intake are modifiable lifestyle factors of cardiovascular disease (CVD) risk. Little is known about the relationship among lifestyle behaviors and the mechanism explaining the effects of lifestyle behaviors on CVD risk conditions among the high-risk populations, African Americans (AAs). The purpose of the study is to examine direct and indirect effects of sedentary behaviors on the prevalence of CVD risk conditions through physical activity and fat intake in AAs with overweight or obesity.

Sedentary behaviors and physical activity were measured by the Paffenbarger Physical Activity Questionnaire. Sedentary behaviors included eating, reading, desk work, watching TV, sitting, or using a computer. The physical activity index (PAI) (kcal/week) was calculated by the items on walking, climbing stairs, or leisure activity. Fat intake was measured by % energy from fat intake by the Fat Screener. The CVD risk conditions included hypertension, heart failure, stroke, angina, and myocardial infarction. Multiple mediational analysis with bootstrapping was conducted. Age was included as a covariate in the model.

A total of 225 AAs (mean body mass index = 32.4 ± 6.7 kg/m²; mean age = 53.4 ± 14.0 years; 77.8 % women; mean sedentary behavior time = 46.74 ± 19.7 h/week; 44% with CVD risk conditions) participated in a cross-sectional study. Sedentary behaviors had a direct effect on PAI ($B = -16.75$, $p = .03$) and fat intake ($B = 0.05$, $p = .01$). The PAI ($B = -0.00$, $p = .01$) and fat intake ($B = 0.13$, $p = .00$) also had a direct effect on the prevalence of CVD risk conditions. Sedentary behaviors did not have a direct effect on the prevalence of CVD risk conditions ($B = 0.01$, $p = .29$). However, there was a significant indirect effect of sedentary behaviors on the prevalence of CVD risk conditions through two mediators—physical activity and fat intake ($B = 0.01$, 95% CI = 0.00, 0.02).

The relationship between sedentary behaviors and the prevalence of CVD risk conditions was fully mediated by physical activity and fat intake in AAs. Findings suggest that increasing physical activity and decreasing fat intake may be important particularly for sedentary AAs to improve CVD risk conditions.

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B059

6:15 PM-7:15 PM

TRAIT/TASK FIT: EFFECTS OF AGENCY, COMMUNION & UNMITIGATED COMMUNION ON CARDIOVASCULAR RESPONSE TO AGENTIC & COMMUNAL TASKS

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Across a number of studies, individuals high in agency, communion, and unmitigated communion (UC) show elevated cardiovascular responses to interpersonal tasks, in contrast to individuals low on these traits. This study examined reactivity to tasks differentially designed to activate agentic and communal concerns, exploring whether stress is activated by orientation match or mismatch. 74 young-adult dating couples watched a film clip, prepared remarks, and discussed their opinions about the film in a verbal interaction task with their partner. Based on random assignment, couples were told their verbal responses would be rated on either individual/agentic dimensions (quality of opinions, depth of thought, word choices) or relational/communal dimensions (active listening, warmth/caring displayed, respect conveyed). Regardless of condition, participants high in trait agency showed larger increases in systolic blood pressure (SBP), $p < .05$ during the discussion task. For those in the agentic condition, there was no effect of agency on physiology, but for those in the communal condition, low agency related to greater increases in SBP, $p < .05$, & heart rate (HR), $p < .01$, showing that the task was more stressful for low (vs. high) agency individuals instructed to behave communally. Individuals who were high (vs. low) in trait communion responded to the task with larger increases in SBP, $p < .005$, diastolic blood pressure (DBP), $p < .05$, & HR, $p < .05$. However, this increase in reactivity was predominantly accounted for by high communion individuals responding in the communal condition, as those individuals showed larger increases in SBP, $p < .001$, DBP, $p < .05$, & HR, $p < .001$, than those lower in trait communion. Trait communion did not affect responses in the agentic condition. Finally, there was no overall relationship between level of UC and task response, nor within the communal condition, despite expectation this trait/situation fit would be activating. For individuals given agentic task directions, people high (vs. low) in UC showed less HR reactivity, $p < .05$, and particularly when listening to their partner speak, they also showed smaller SBP, $p < .05$, & DBP, $p < .05$, responses. This may indicate that people high in UC are using listening time to plan their responses rather than attend to their partners, consistent with task directions and a more agentic orientation. Implications for methodology and understanding the impact of trait/situation fit are discussed.

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B060

6:15 PM-7:15 PM

USING FAITH-BASED HEALTH FAIRS TO EVALUATE CLERGY CARDIOVASCULAR DISEASE RISK FACTORS

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Background: Obesity is associated with higher rates of cardiovascular disease (CVD) risk factors, including hypertension, diabetes, and high cholesterol. The Southeastern U.S has high rates of these risk factors as well as high rates of religious affiliation and church attendance. Church leaders are influential in their communities and important gatekeepers in the delivery of faith-based health promotion programs. However, clergy have higher rates of chronic disease and obesity than the general population. This study used data collected at United Methodist Church annual conference health fairs to examine the CVD risk factors of church leaders in the Mid-South.

Methods: In 2016, 295 clergy and church laypersons from Memphis, TN, Arkansas (AR) and Mississippi (MS) attended health fairs. Participants self-reported demographics, including medication usage, height and weight, and received screenings for blood pressure, cholesterol, and blood glucose. Logistic regressions were used to examine the likelihood of participants meeting recommendations for blood glucose, blood pressure, and cholesterol.

Results: Participants were on average 62.7 ± 13.7 years old, White (73%), female (53%), and overweight (BMI= 29.5 ± 5.6). Medication was taken for blood pressure, blood sugar, and cholesterol by 22.4%, 1.4%, and 7.8% of participants, respectively, with 30.5% of participants taking 2 or more medications. Males were more likely than females to be overweight ($p = .03$) and have blood glucose values above normal ($p = .02$) while females were more likely to have higher cholesterol values ($p < .001$). Compared to Whites, African Americans were more likely to be classified as overweight or obese ($p < .001$) and have hypertension ($p = .05$). Compared to AR Behavioral Risk Factor Surveillance System (BRFSS) data, AR health fair participants had a higher prevalence of high blood pressure than the general population (52.6% vs. 38.7%). Compared to MS BRFSS data, MS health fair participants had higher prevalence of high blood pressure than the general population (52.8% vs. 40.2%). Older participants (OR: 0.97; 95% CI: 0.95, 0.99), males (OR: 0.56; 95% CI: 0.33, 0.96), and those with a higher BMI (OR: 0.89; 95% CI: 0.85, 0.94) had lower odds of meeting blood glucose recommendations. Older participants (OR: 0.97; 95% CI: 0.95, 0.99) also had lower odds of meeting blood pressure recommendations. However, males (OR: 4.91; 95% CI: 2.52, 9.56) had lower odds of meeting cholesterol recommendations.

Conclusion: Given our findings related to the high prevalence of overweight and obesity as well as high blood pressure among clergy, health fairs should be considered opportunities to monitor clergy health and potentially conduct interventions related to reducing CVD risk factors.

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MERITORIOUS AWARD WINNER

B061

6:15 PM-7:15 PM

ASSOCIATIONS BETWEEN BEHAVIORAL FACTORS AND METABOLIC SYNDROME AMONG ASIAN AMERICANS

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BACKGROUND: Metabolic Syndrome (MetS) is a term that connects several risk factors for cardiac disease, diabetes, and all-cause mortality in multiple ethnic groups. Little research has examined MetS and its predictors among Asian Americans (AA). Only one study (Palaniappan et al., 2011) examined Asian American subgroups using an adjusted and unadjusted waist circumference and found significantly higher prevalence of MetS for AA at all BMI levels with the adjusted waist circumference. This suggests that lower cutoff values for waist circumference be used for MetS diagnoses for AA, given their smaller bone structure.

AIM: This study examines how psychological (anxiety, depression) and behavioral (sleep duration, physical activity) factors influence MetS scores in a large sample of 3,967 Asian American adults, using both adjusted and unadjusted MetS scores.

METHOD: Data were collected from medical records and self-report questionnaires of AA adults attending a preventive care visit (1864 women, 2103 men; M age=38; SD =10). MetS was assessed using NCEP ATP III criteria, with and without adjustment of waist circumference. Depressive symptoms were assessed with the Patient Health Questionnaire-9, anxiety with the General Anxiety Disorder-7, and physical activity by whether weekly MVPA was the recommended >150 minutes. Multiple regression analyses examined each predictor separately. Prescribed medication for high BP, hyperglycemia, dyslipidemia, depression, and sleep disorder were covaried.

RESULTS: Prevalence of MetS among AAs increased from 5% to 7% in women and 9% to 18% in men using the NCEP ATP III criteria adjusted for a smaller waist circumference. Shorter sleep duration was associated with higher adjusted MetS scores, as well as the individual components of SBP, DBP, waist circumference, and fasting glycemia. Anxiety was associated with higher triglycerides, waist circumference, and fasting glycemia. Participants who reported >150 minutes of weekly MVPA had significantly lower MetS scores (adjusted and unadjusted) than those who did not.

CONCLUSIONS: Adjusting NCEP ATP III MetS criteria using a smaller waist circumference increased prevalence among AA, doubling it for men, suggesting that current guidelines may be underestimating MetS prevalence among AA. Behavioral factors should be considered in designing interventions to reduce MetS among AA. The findings emphasize the need to study MetS and its predictors within specific ethnic and cultural groups.

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B062

6:15 PM-7:15 PM

ATTENTION AND EXECUTIVE FUNCTION, BUT NOT MEMORY, PREDICT MORTALITY IN HEART FAILURE

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Introduction: Heart failure (HF) remains a significant concern for healthcare providers seeking to improve morbidity and mortality. The prevalence and impact of cognitive impairment in HF is increasingly recognized. As cognitive impairment can be detrimental to self-management, it seems likely that cognitive function may also be predictive of outcomes such as mortality. However, little work has tested whether cognitive function is related to mortality risk in HF.

Purpose: To evaluate the effect of cognitive function on mortality risk in HF.

Method: Cognitive function, including the domains of attention, executive function, and memory, were assessed in 325 patients with HF participating in an observational study of self-management behavior. All-cause mortality data were obtained from the National Death Index (median 2.95 years of follow-up). The relationship between each domain of cognitive function and mortality was assessed with Cox proportional hazards regression. Age, gender, New York Heart Association Class (i.e., HF severity), and Patient Health Questionnaire-9 score (i.e., depressive symptoms) were included as covariates.

Results: Participants were 325 patients with systolic HF aged an average of 68.6 ± 9.6 years (59% male, 73% Caucasian). Fifty-seven deaths (17.5%) occurred. Independent predictors of increased mortality risk included older age (HR: 1.05, 95% CI: 1.02 – 1.09), male gender (HR = 1.94, 95% CI: 1.04 – 3.60), and higher depressive symptoms (HR: 1.07, 95% CI: 1.02 – 1.13). Following adjustment for these covariates, better attention was associated with decreased mortality risk (HR = .95; 95% CI: .91 – .99). Similarly, higher executive function was related to decreased mortality risk (HR = .95; 95% CI: .91 – .98). Memory was not related to mortality risk (HR = .99; 95% CI: .96 – 1.04).

Conclusion: Higher attention and executive function, but not memory, were associated with better survival in HF. Medication non-adherence is more strongly associated with memory than attention and executive function, so the current findings may not be explained by medication non-adherence. It is possible that impairment in attention and executive function reduce self-management in other areas, or are markers of more severe disease pathophysiology. Further studies to define the mechanisms of this relationship may ultimately provide insight to mitigate the effects of cognitive impairment on poorer prognosis in HF.

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B063

6:15 PM-7:15 PM

CARDIAC SELF-BLAME, CONTROL APPRAISALS, DEPRESSION, AND HEALTH-RELATED QUALITY OF LIFE IN CARDIAC REHABILITATION PATIENTS

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Following a cardiovascular event, most patients engage in a causal search to understand why it occurred. For example, patients tend to attribute their cardiac events to their own behaviors, referred to as behavioral self-blame (BSB), or to stable aspects of their dispositions, referred to as characterological self-blame (CSB). The Cardiac Self-Blame Attribution (CSBA) scale is a valid 12-item scale that assesses both types of attributions, but the scale has not been examined as a predictor of health outcomes. Thus, the present study examined whether each type of self-blame was related to depressive symptoms and health-related quality of life (HRQoL) among underrepresented cardiac rehabilitation (CR) patients, and whether cardiac control appraisals mediated these relationships. CR patients ($N = 69$) recruited from an urban, safety-net hospital completed questionnaires during their CR orientation appointment. Depressive symptoms were assessed using the Patient Health Questionnaire-9, mental and physical HRQoL were assessed with the SF-12 Health Survey, and control appraisals were assessed with the Control Appraisals Scale-Revised. Most of the sample was male (57.8%) with an average age of 55.7 ($SD = 12.2$) years. A plurality were European American (46%) and African American (46%), and 12.5% were uninsured or had a hospital discount. Hayes's PROCESS macro was used to test for mediation. BSB was not significantly related to depressive symptoms or mental HRQoL and neither type of self-blame was significantly related to physical HRQoL. However, CSB was significantly positively related to depressive symptoms ($c' = .19, p < .05$), controlling for age, but control appraisals were not a significant mediator. CSB was significantly negatively related to mental HRQoL ($c' = -.62, p < .05$), controlling for age, but control appraisals did not mediate this relationship. Thus, attributing a cardiac event to one's own character was related to higher depressive symptoms and lower mental HRQoL, but this relationship was not explained by cardiac control appraisals. Results suggest that CR providers should assess CSB and design interventions that target these attributions in order to ameliorate potentially aversive mental health effects in CR patients. In addition, future research should examine other variables that may explain the relationship between self-blame and health outcomes among underserved patients with cardiovascular disease.

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B064

6:15 PM-7:15 PM

CORRELATES OF DECLINE IN HEALTH-RELATED QUALITY OF LIFE AMONG ADOLESCENTS AND YOUNG ADULTS WITH CONGENITAL HEART DISEASE

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Introduction: Patient-reported outcomes, such as health-related quality of life (HRQoL), are associated with increased morbidity and mortality among chronically ill populations. Yet, little is known about how HRQoL changes over time among adolescents and young adults with congenital heart disease (AYAConHD), which affects more than 40,000 births per year in the United States alone. Strategies that tailor healthcare to address physical, emotional, and social HRQoL may reduce the burden of CHD morbidity and mortality. This study aims to a) examine change in HRQoL from baseline (T1) to 3-years follow-up (T2) and b) identify demographic and medical predictors of change.

Methods: Participants included 62AYAConHD ($M_{age} = 17.9 \pm 2.2$, range=15–22 years, at T1; 58% female; cardiac lesion severity=27% simple, 50% moderate, 23% complex) recruited from a pediatric and an adult hospital who completed the RAND 36-Item Health Survey of HRQoL at T1 and T2. Paired T-tests analyzed change in HRQoL. Change scores were calculated for HRQoL by subtracting T1 from T2 scores. Pearson correlations examined associations between baseline demographics (age, sex, estimated family income, distance from cardiology clinic) and change scores for HRQoL. An ANOVA examined change in HRQoL across lesion severities.

Results: HRQoL declined in several domains, including role limitations due to emotional concerns ($t=2.17, p=0.03$), emotional well-being ($t=2.64, p=0.01$), social functioning ($t=2.05, p=0.05$), and pain ($t=2.29, p=0.03$). Being older was associated with a steeper decline in role limitations due to physical health ($r=-0.26, p=0.04$), being female was associated with greater decline in role limitations due to emotional problems ($r=-0.30, p=0.02$), and having a lower family income was associated with a greater decline in physical functioning ($r=0.40, p=0.01$).

Conclusions: Significant reductions in multiple domains of HRQoL were identified after only 3 years. Demographic factors were associated with declines in various areas of HRQoL. Given the relationship between HRQoL and health outcomes, pediatric and adult healthcare providers should consider monitoring change in patient-reported outcomes over time, and for those with risk factors for decline, offer psychosocial resources.

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B065

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DOES LOW CHOLESTEROL LEAD TO HIGHER MORTALITY IN ADULTS WITH HEART FAILURE? IMPLICATIONS FOR CHOLESTEROL-LOWERING IN HF

Nolan Vora, N/A¹, Sundar Natarajan, MD², Binhuan Wang, PhD³¹VA New York Harbor Healthcare System, NY, United States, New York, NY; ²NYU Langone Health, New York, NY; ³NYU School of Medicine, New York, NY**BACKGROUND:** Several studies have shown a linkage between low cholesterol levels and a worse prognosis in patients with HF. The effects of statin on patients with HF remain unclear. Statin and other lipid-lowering agent usage in patients with HF may not be appropriate.**PURPOSE:** This study sought to: a) determine the relationship between intrinsically low cholesterol and mortality in patients with HF, and b) assess if lipid-lowering agent usage provides a benefit in patients with HF.**METHODS:** Data on patients with HF was compiled from the Continuous NHANES database from 1999–2010. These patients were grouped into three total cholesterol categories: Low (200 mg/dL + lipid lowering agent users). Patients were also classed on whether they were taking lipid-lowering agents. These categories were used to examine all-cause mortality via multivariate Cox Models.**RESULTS:** There were 810 patients with HF who were classified into low (n=128), moderate (n=180) and high (n=502) cholesterol categories. Further, 324 were taking lipid-lowering agents, primarily statin. When cholesterol categories were entered into Cox models that excluded patients who died within a year of examination to exclude for frailty (n= 66) and adjusted for age, and CRP, HDL, sodium levels and used high cholesterol as reference, the hazard ratio (HR) for mortality for low cholesterol was 1.915 (95% CI 1.196–3.067, p value 0.0075), and for moderate cholesterol 0.852 (95% CI 0.567–1.280, p value 0.4365). When we compared lipid-lowering agent usage using Cox models that adjusted for age, cholesterol (linear), CRP, HDL, sodium levels, non-users showed a HR of 1.555 (95% CI 1.068–2.265, p value 0.0220).**CONCLUSION:** Inherently low cholesterol patients had significantly worse prognosis compared to high cholesterol patients. This could imply that intrinsically low cholesterol is an indicator of poor prognosis. Lipid-lowering agent users were shown to have significantly better prognosis compared to non-users. These findings support that pharmacologically induced low total cholesterol does not have a negative effect on patients with HF. Continuing statin medication should be advised for patients with HF.**CORRESPONDING AUTHOR:** Nolan Vora, N/A, VA New York Harbor Healthcare System, NY, United States, New York, NY; nnv217@nyu.edu

B066

6:15 PM-7:15 PM

DOSE EFFECT OF SMARTPHONE BREATHING MEDITATION UPON BLOOD PRESSURE AMONG PRE-HYPERTENSIVE ADULTS

Jessica Chandler, Ph.D.¹, Zack Adams, PhD², Vanessa Diaz, MD¹, John Sieverdes, PhD¹, Mercedes Cain, HS¹, Bradley Perlitz, HS¹, Candie Mendez, HS¹, Brenda Brunner-Jackson, MPH¹, Sachin Patel, MSc¹, Frank Treiber, Ph.D.¹¹Medical University of South Carolina, Charleston, SC; ²Indiana University, Indianapolis, IN**Background:** Pre-hypertension (HTN), a primary risk factor for HTN affects ~33% of adults. Chronic stress is a risk factor for HTN and cardiovascular disease. Breathing awareness meditation (BAM) reduces stress levels and blood pressure (BP), but optimal dosage level has not been determined. An iOS and Android smartphone BAM app (Tension Tamer, TT) uses text/audio instructions with proprietary embedded, validated reflective photoplethysmography software that captures real-time heart rate (HR) from a user's fingertip placed over video camera lens during BAM sessions. Users receive feedback graphs after each session showing their HR changes. TT timestamps all HR data, which provides an index of adherence to completing sessions. Three dosages of TT were tested over a 6-month trial.**Methods:** Sixty-four adults with pre-HTN (mean age: 34.9 yrs; 35 males; 33 White; 31 Black) (mean SBP over 3 consecutive screenings: 128.3 mmHg; 95% recruitment rate) were randomly assigned to 5, 10 or 15 minute (min) sessions, twice daily.**Results:** Mixed modeling results showed a significant time effect for systolic BP (SBP) with a dose-response effect at months 3 (5 min= -6.8;10 min= -6.1;15 min= -12.1 mmHg, p<.02) and 6 (5 min=-5.1;10 min= -8.3;15 min= -12.4 mmHg, p<.02). Adherence declined over time and was lowest in the 15 min dose group, though SBP reductions were maintained. Generally, adherence was negatively associated with dose as the study progressed. Average % adherence declined from month 1 through month 6 across dosage groups (ps<.001); 5 min (mth 1: 76% to mth 6: 78%), 10 min (mth1: 76% to mth 6: 73%) and 15 min (mth 1: 73% to mth 6: 48%).**Conclusion:** The TT app is acceptable and useful in tracking adherence and shows promise in reducing SBP in adults with pre-HTN. A 12-month two arm (TT vs enhanced attention control) efficacy RCT is underway.**CORRESPONDING AUTHOR:** Jessica Chandler, Ph.D., Medical University of South Carolina, Charleston, SC; chandlje@musc.edu

B067

6:15 PM-7:15 PM

EXERCISE TRAINING TO IMPROVE PHYSICAL FUNCTION AND QUALITY OF LIFE IN HEART FAILURE PATIENTS: A META-ANALYSIS

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Background: Heart Failure (HF) is a leading cause of morbidity and mortality. More than half of HF cases have Heart Failure with Preserved Ejection Fraction (HFpEF). No good treatment currently exists for HFpEF. Small clinical trials indicate that exercise training may be an effective treatment for HFpEF. A few meta-analyses of these trials have been conducted but these only include approximately half of the available data and there were methodological problems. Our goal was to use all currently available data to quantitatively evaluate the effectiveness of exercise as treatment for HFpEF.

Methods: Our search of PubMed, Web of Science, and Embase for ((HFpEF OR Heart Failure) AND (Exercise Training OR Exercise OR ET)) resulted in 1134 studies. Of these, 68 papers were selected for abstract review. After all papers were reviewed, 8 fit the inclusion criteria for the meta-analysis. Biographic data, indicators of physical function such as the 6 Minute Walk Test (6MWT), the Minnesota Living with Heart Failure Questionnaire and the Short Form 36 were extracted from the included studies. After excluding pre-post studies, 7 randomized studies were included for the 6MWT outcome, 7 for the MLWHFQ and 6 for the SF-36 physical function QOL for the random effects meta-analysis.

Results: We analyzed 6–7 studies. Mean difference for the 6MWT for HFpEF patients was 44.34 (95%-CI 22.77, 65.92), showing a clear improvement in physical function. For the MLWHFQ outcome, mean difference was -7.07 (95%-CI -13.71, -0.42). Lower scores indicate better quality of life, therefore HFpEF patients placed on an exercise regimen experienced a better HF-specific quality of life after participating in the trial. Finally, when we assessed studies that evaluated SF-36 physical function as an outcome, mean difference was 6.73 (95%-CI 1.45, 12.01). Even when we included studies that did not include a control group (n=6) or tested alternate forms of exercise (n=2) in sensitivity analyses, the results were robust and the results did not change.

Conclusion: Exercise is a promising treatment for HFpEF. There is a clear relation between exercise training and both improved physical function and increased quality of life. Further large scale randomized clinical trials need to be carried out to definitively show the benefits of exercise on patients with HFpEF.

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MERITORIOUS AWARD WINNER

B068

6:15 PM-7:15 PM

HIGHER ANXIETY AND WILL TO LIVE ARE ASSOCIATED WITH POORER ADHERENCE TO CARDIAC REHABILITATION

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Background: Despite the documented benefits of cardiac rehabilitation (CR), adherence remains suboptimal. Greater distress (e.g. depression and anxiety) has been associated with both better and poorer adherence. Will to live (i.e. desire, determination, and effort to survive) has been associated with survival among cardiac patients, thus it also may be relevant to CR adherence. In particular, will to live may exacerbate the influence of depression and anxiety on CR adherence. It was hypothesized that depression and anxiety would be negatively associated with adherence, and that will to live would moderate these relationships.

Methods: Sixty patients (mean age = 56.9 ± 10.8 years; 38 males) completed self-report measures within a week of starting outpatient CR. The 14-item Hospital Anxiety and Depression Scale (HADS) was used to measure symptoms of depression and anxiety, with higher scores reflecting greater distress. The 5-item Wish to Prolong Life questionnaire was used to assess will to live. Patients rated their desire to continue living across varied conditions (e.g. "Even if I could not get out of bed, I would want to live rather than die") on a 5-point Likert scale, with higher scores indicating greater desire to live, regardless of potential consequences. Hierarchical regression analyses were performed to predict CR adherence, measured as session attendance (%) and program completion (yes/no) from depression and anxiety, as well as the interaction of those variables with will to live.

Results: Neither depression nor anxiety was significantly associated with CR adherence ($p > .33$). However, there was a significant interaction of will to live with anxiety in predicting attendance ($\beta = -0.31, p = .03, \text{Model } R^2 = 0.19, p = .01$), reflecting that anxiety predicted lower CR attendance only among patients reporting greater endorsement of will to live.

Conclusions: These data help clarify the complex relationship between distress and CR adherence. Findings suggest that higher anxiety is associated with poorer adherence, but only in combination with greater motivation for living. Patients reporting higher anxiety and greater will to live at the start of CR may benefit from additional guidance regarding strategies to make actionable behavioral change in the context of CR.

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B069

6:15 PM-7:15 PM

INTERNAL HEALTH LOCUS OF CONTROL AND ANXIETY IN PATIENTS WITH LEFT VENTRICULAR ASSIST DEVICES

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Six million Americans are living with heart failure and this number is expected to increase by 46% within the next 15 years. Surgically implanted mechanical pumps, Left Ventricular Assist Devices (LVAD), are becoming a more common treatment for end stage heart failure. However, there is limited research on the patient experience of living with an LVAD. This study, consisting of 28 patients with LVADs recruited from the heart failure clinic of a large academic medical center, examined relationships between stressors specific to living with an LVAD, levels of generalized anxiety, and health locus of control (HLOC). Bivariate correlations were calculated for a researcher-developed questionnaire of LVAD stressors, the Generalized Anxiety Disorder-7 item scale (GAD-7), and the Multidimensional Health Locus of Control Scale. Eighteen percent of patients endorsed clinically significant levels of anxiety on the GAD-7. Higher scores on the GAD-7 were significantly positively correlated with several LVAD stressors including stress related to the driveline ($r = .72, p < .01$), LVAD-related pain or discomfort ($r = .88, p < .01$), and fear of LVAD-related infection ($r = .76, p < .01$). Participants with a higher internal health locus of control reported lower levels of anxiety on the GAD-7 ($r = .48, p < .05$). A series of regression analyses showed that among all LOC types (Internal HLOC, Powerful Others HLOC, Chance HLOC), greater Internal HLOC significantly predicted lower stress related to the driveline, $\beta = -.62, t(21) = -3.62, p < .01$; possibility of having to change over to the backup controller, $\beta = -.50, t(22) = -2.79, p < .05$; dressing changes, $\beta = -.53, t(21) = -3.08, p < .01$; LVAD-related pain or discomfort, $\beta = -.51, t(22) = -2.98, p < .01$, and showering with the LVAD, $\beta = -.49, t(22) = -2.61, p < .01$. Results indicate a relationship between an internal health locus of control and decreased levels of anxiety and LVAD-related stress. Further research is needed to determine whether interventions that promote an internal health locus of control may improve quality of life for LVAD patients.

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B070

6:15 PM-7:15 PM

LOWER ESTIMATED GLOMERULAR FILTRATION RATE IS ASSOCIATED WITH POORER VISUAL MEMORY PERFORMANCE AMONG OLDER ADULTS

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Neurocognitive decline and decline in renal function are significant public health issues that strongly impact older adults. Often exacerbated by age-related vascular and metabolic co-morbidities, prior evidence suggests that poor renal function is linked to neurocognitive decrements and cognitive decline. Given the documented link between these age-related factors, it is vital to understand the subclinical changes that precede the onset of renal disease and neurocognitive decline and/or dementia among healthy older adults; however, the role of renal function in neurocognitive performance among older adults without frank renal disease (i.e., chronic kidney disease, end stage renal disease) is not well understood. Therefore, the aim of the current study was to examine relations of eGFR to cognitive function among a racially diverse sample of community-based older adults, absent of renal disease, using data from the Healthy Heart and Mind (HHM) Study. The HHM Study is a cross-sectional examination of relations of subclinical cardiovascular disease to brain pathology and neurocognitive function among community-dwelling older adults. Sixty participants (26.3% male; 29% African American) with a mean age of 68.63 years (SD=6.04) completed an eligibility screening, neuropsychological test battery, vascular testing, a blood draw, and structural MRI. The domains of neurocognitive function assessed included attention and cognitive flexibility, verbal fluency, verbal memory, visuospatial memory, working memory, and perceptuo-motor speed. Multiple regressions were used to analyze relations among eGFR and performance on specific neuropsychological tests, adjusting for age, gender, education, body mass index, and systolic blood pressure. Results showed that eGFR was significantly and positively associated with short delay ($p < .05$) and long delay ($p < .01$). That is, lower eGFR was associated with poorer performance. Results suggest that renal function may play an important role in visuospatial memory among older adults even prior to the potential onset of renal disease. Future studies might examine whether volume loss in specific brain areas may mediate this association. In addition, future research should assess whether pharmaceutical and lifestyle interventions aimed at promoting renal health may help to delay visuospatial memory decline among older adults; however longitudinal studies are needed to test these hypotheses.

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B071

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PERCEIVED CONTROL, PSYCHOLOGICAL DISTRESS, AND ADHERENCE TO HEALTH BEHAVIORS IN PATIENTS IN CARDIAC REHABILITATION

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Evidence supports a relationship between psychological distress and health outcomes in patients with cardiovascular disease (CVD). For example, anxiety and depression have been shown to negatively affect health behavior adherence. Less is known, however, about the cognitive and emotional precursors to distress within the context of CVD. This project assessed relationships between perceived control (PC), psychological distress, and health behavior adherence in patients in cardiac rehabilitation (CR). It was hypothesized that symptoms of anxiety and depression would mediate the relationship between PC and adherence.

Patients in CR ($N = 146$) completed questionnaires at the beginning of CR (Time 1) and 12 weeks later at the end of CR (Time 2). The mean age of participants was 64 years, and most were male (69%) and European-American (94%). Two forms of PC (prevention and recovery), anxiety symptoms (using the Beck Anxiety Inventory), and depressive symptoms (using the Beck Depression Inventory-II) were measured at Time 1. Health behaviors were measured at Times 1 and 2 using an adapted version of a validated health behavior scale. Adherence was calculated by coding whether participants' behaviors met current recommendations.

Hayes' PROCESS macro was used to test for mediation. First, anxiety and depressive symptoms failed to mediate the relationship between prevention-focused PC and adherence. However, prevention control was negatively related to depressive symptoms ($a_2 = -2.19, p < .01$), and had a significant direct effect on adherence ($c' = .371, p = .01$), after controlling for covariates. Prevention control was unrelated to anxiety symptoms, and neither anxiety nor depressive symptoms predicted adherence. Second, anxiety and depressive symptoms were nonsignificant mediators of the relationship between recovery-focused PC and adherence. Recovery control had significant direct effects on anxiety symptoms ($a_1 = -2.92, p < .01$), depressive symptoms ($a_2 = -3.80, p < .001$), and adherence ($c' = .591, p = .001$), after controlling for covariates. Neither anxiety nor depressive symptoms were related to adherence.

Findings did not support mediation. However, significant associations were found between PC and immediate and long-term physical and mental health outcomes, suggesting that PC should be assessed upon entrance to CR. If patients endorse low levels, further assessment and intervention may be warranted to prevent aversive outcomes and facilitate recovery.

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B072

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PERCEIVED HEALTH COMPETENCY PREDICTS EMOTIONAL DISTRESS AMONG YOUNG ADULT SURVIVORS OF CONGENITAL HEART DISEASE

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Objective: Congenital heart disease (ConHD) places survivors at increased risk for health complications as they age and requires long-term medical management. Perceived health competency, or how capable individuals feel in managing their health, is linked to emotional adjustment in various disease populations, but has not been investigated among ConHD survivors. The present longitudinal study examined perceived health competency at baseline (T1) as a predictor of emotional distress at three-year follow up (T2). Lower T1 PHC was hypothesized to predict higher T2 emotional distress, independent of T1 emotional distress and T1 functional impairment.

Methods: ConHD survivors ($n=125$; $M_{age}=27, SD=7.26$; range=15–39; 58.6% female; 25% simple, 44% moderate, 31% complex) were recruited from a pediatric and an adult hospital as part of a larger study. Participants completed measures of general perceived health competency (PHC; e.g., "I handle myself well with respect to my health") and emotional distress (Youth or Adult Self-Report) at T1. At T2, participants completed the Hospital Anxiety and Depression Scale. New York Heart Association functional class, a measure of functional impairment, was abstracted from medical charts at T2. Pearson correlations were performed to establish relationships between study variables. Stepwise linear regression was conducted to determine whether T1 PHC predicted significant variance in T2 depression and anxiety symptoms above and beyond T1 emotional distress and T2 functional impairment.

Results: Lower T1 PHC was significantly associated with greater T1 emotional distress ($r=.50$) and T2 emotional distress, (depression: $r=-.46$; anxiety: $r=-.46$) as well as T2 functional impairment ($r=-.36$). T1 PHC predicted T2 depression ($\beta=-.43, 95\% CI: -.31$ to $-.12$) and anxiety symptoms ($\beta=.38, 95\% CI: -.33$ to $-.11$), and accounted for a significant amount of variance in T2 symptoms of depression ($FD_{depression}=22.06, p.01$) and anxiety ($FD_{anxiety}=18.02, p<0.01$) above and beyond T1 emotional distress. Functional impairment did not account for any additional variance in T2 emotional distress.

Conclusion: Findings suggest that ConHD survivors who feel more competent in managing their health may be less likely to experience future emotional distress. Future research should consider including enhancing patients' confidence in their disease self-management as a component of psychosocial interventions to promote emotional wellbeing among ConHD survivors.

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B073

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SISTERTALK II: A RANDOMIZED CONTROLLED TRIAL TO IMPROVE ADHERENCE TO WEIGHT LOSS FOR HYPERTENSION CONTROL AMONG BLACK WOMEN

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Introduction: Weight loss, physical activity (PA) and improved nutrition are important behavioral recommendations for hypertension. However, adherence to these health behavior recommendations are poor, especially among Black American women. The present study assessed two mechanisms to deliver a culturally tailored video program for weight loss, PA and nutrition among hypertensive Black women.

Methods: *SisterTalk II* is a Randomized Controlled Trial with two 3-month intervention groups (clinic-delivery (CD) versus home-delivery (HD) channel) and a control group. Participants, recruited from clinical sites in southeastern New England, completed measurements at baseline, and 4 months (4M) and 12 months (12M) after the intervention. The CD group met weekly over 12 weeks and were led by a trained lay-facilitator, while the HD group received intervention materials via mail. Primary outcomes are dietary changes and PA behavior as measured by the food frequency questionnaire (FFQ) and total leisure activity score (TLAS). Secondary outcomes include intervention food-related behaviors, and psychosocial measures (e.g. self-efficacy, social support). Exploratory outcomes include BMI, WC and BP. Analyses of study variables include chi-square and paired-samples t-test. 2-way repeated measures ANOVA assessed group differences. Missing follow-up data were imputed using the last observation carried forward.

Results: The CD group reported the highest increase in consumption of fruits and vegetables (FV) ($p < .001$) at 4M compared to HD and control. HD reported significantly greater decrease at 12M compared to CD ($p = .01$). Both CD and HD reported significantly greater decreases in % Cal Fat at 4M and 12M compared to CTRL (both $p < .001$). The CD group reported the highest increase in PA compared to HD and control at 4M and 12M (both $p < .001$). The CD group reported significantly greater increases in use of goal setting, self-rewards, grocery list and recognizing triggers to unhealthy eating (all $p < .05$) compared to controls. Also, compared with the control group, the CD group reported significantly greater increases in motivation to increase FV intake and to eat less, and confidence in reading food labels (all $p < .05$).

Conclusion: The CD group in *SisterTalk II* reported most of the greatest improvements in FV intake, PA, following intervention-recommended food behaviors, motivation and confidence for several healthy diet behaviors relative to the controls and in some cases, the HD group.

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B074

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SOCIAL DETERMINANTS OF HYPERTENSION AND TYPE-2 DIABETES IN KENYA: A LATENT CLASS ANALYSIS OF A NATIONALLY REPRESENTATIVE SAMPLE

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Objective: Cardiovascular disease is among the leading causes of death in Kenya and type II diabetes (T2D) is a growing chronic health concern in the country. A gap exists in examining how demographic characteristics coalesce to identify individuals at high risk for hypertension and/or T2D in Kenya. The current study examined demographic typologies associated with self-report diagnoses.

Methods: We examined 43,898 individuals between the ages of 15 and 49 from the 2014 Kenya Demographic and Health Survey (KDHS). Descriptive analyses were conducted using STATA 14. Latent class analysis (LCA) was conducted on Mplus 7.4., and explored the social determinants of T2D and hypertension among Kenyan adults. To determine the number of classes, a series of models was conducted starting with a 1-class model followed by specifying an increased number of classes (e.g., 2-class, 3-class, etc.). Optimal model selection was based upon recommended indices including low adjusted Bayesian Information Criterion (BIC) relative to other models, significant Lo-Mendell-Rubin Likelihood Ratio Test (LMR-LRT), and entropy (quality of classification).

Results: Findings from the KDHS revealed that 5% of the population were diagnosed with hypertension and 1% of the population was diagnosed with T2D. Latent class analysis identified four latent class: 1) Single, never married, young adults (11%), who were nonsmokers, has a low likelihood of being diagnosed with hypertension or T2D. 2) Married men, who were over the age of 35 years 2 (17%), were more likely to be smokers and diagnosed with hypertension or T2D. 3) Married women over the age of 30 years (53%), who were typically nonsmokers, had a 10.3% chance of being diagnosed with hypertension. 4) Single, never married individuals, who were under the age of 20 years, had a zero risk of being diagnosed with hypertension or T2D.

Conclusions: The results suggest that Kenyan women over 30 years may be at increased risk of hypertension. Future studies should include additional socio-demographic characteristics. Increasing knowledge of correlates should be used for targeted and tailored health promotion-interventions in this group.

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B075

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THE EFFECT OF PATIENT DEPRESSION ON CARE PARTNERS' HELPING AND PERCEIVED STRAIN AMONG PATIENTS WITH CONGESTIVE HEART FAILURE

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Background: Patients with congestive heart failure (CHF) frequently receive support for self-care from important family members and friends (i.e., “Care Partners”). Over 20% of CHF patients experience clinical depression, which is associated with higher rates of mortality, morbidity, and hospitalization. Support from Care Partners (CP) can lower the risk of these poor outcomes. The interpersonal theory of depression predicts that individuals with depression will receive less social support than non-depressed individuals. However, some evidence suggests that CPs provide more support to patients they identify as having depression. It is not known whether CPs’ support correspond to patients’ self-reported depressive symptoms. Accordingly, we examined the association between CHF patients reported depressive symptoms and CP reported time spent providing assistance and strain.

Methods: We analyzed baseline survey data from 323 CHF patient-CP dyads participating in a randomized trial. Patients’ CESD-10 scores were dichotomized (10) to create an indicator of probable depression status. Outcome variables were CP reported hours per week helping their patient-partner in person and via telephone, and CP strain (assessed using the Caregiver Strain Index). Negative binomial regression was used to examine over-dispersed count variables. Multiple linear regression was used to examine continuous outcomes. Models controlled for patients’ total cardiovascular comorbidities.

Results: CPs provided more hours of in-person help per week to CHF patients with depression ($M = 3.42$, $SE = .36$) compared to those without depression ($M = 2.46$, $SE = .26$; $IRR = 1.40$, 95%CI: [1.04, 1.87], $p = .025$). CPs also provided more hours of telephone support to patients with depression ($M = 2.94$, $SE = .22$) compared to those without depression ($M = 2.01$, $SE = .16$, $IRR = 1.46$, 95%CI: [1.19, 1.81], $p < .001$). CP strain did not differ between depressed and non-depressed CHF patients ($B = .13$, $SE = .32$, $p = .691$).

Conclusion: Patients with depression received approximately one additional hour of CP reported assistance and telephonic support per week – suggesting that CPs recognize and respond to patients’ depression. Yet, CP reported strain did not differ between depressed and non-depressed patients. These findings provide an important counterpoint to conventional wisdom regarding the impact of depression on patients’ social support.

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B076

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THE EFFECTS OF GENETIC RISK AND NEIGHBORHOOD SOCIAL FACTORS ON BLOOD PRESSURE IN AFRICAN AMERICANS ADULTS

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African-American adults have a long-standing disparity in cardiovascular health in the United States, and disproportionately experience greater rates of elevated blood pressure (BP) as compared to other ethnic minorities and Caucasians. Gene environmental interaction frameworks offer insight into how neighborhood social factors may moderate genetic susceptibility in understanding blood pressure outcomes. The purpose of the current study was to examine the effects of genetic risk (HPA axis index) and neighborhood factors (social control- likelihood of neighbors intervening in negative events-; and social life- positive interactions with neighbors) on BP (systolic BP [SBP], diastolic BP [DBP]) in underserved African-American adults from the Positive Action for Today’s Health (PATH) trial. To evaluate genetic risk, two single nucleotide polymorphisms (SNPs) were genotyped related to the HPA axis (HPA-axis SNP; *Bcl1* [rs41423247], *FKBP5* [rs1360780]). Blood pressure data was assessed for each participant by averaging three assessments using a standard research protocol. Regression analyses were conducted to assess the effects of genetic risk and neighborhood social factors on SBP and DBP outcomes. The sample size included 165 participants (59% female; BMI $M=30.94$, $SD=7.46$; age $M=52.10$, $SD=14.64$). The regression model for SBP was significant ($F [14,149] = 2.66$, $p < .01$), accounting for over 12% of variance, indicating that age and BP medications were both significant predictors of SBP. The regression model for DBP was also significant ($F [14,149] = 2.23$, $p < .01$), accounting for 10% of variance. In the regression model for DBP, neighborhood social control ($B = -1.37$; $SE = 0.70$; $p=0.05$) and social life ($B = 0.35$; $SE = 0.15$, $p<0.03$) both significantly predicted DBP. DBP was negatively associated with neighborhood social control, suggesting that higher neighborhood social control was associated with lower levels of DBP. Unexpectedly, DBP was positively associated with neighborhood social life, suggesting that greater social life was associated with higher levels DBP. While we did not find any significant gene-by-environment interactions for SBP or DBP, we did identify neighborhood social life and social control as potentially important predictors of DBP. Further research is warranted as this study clearly identifies the neighborhood environment as a potentially important factor in BP regulation, particularly in Africa-American communities.

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B077

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THE RELATION BETWEEN HEART HEALTHY BEHAVIORS IN COLLEGE-AGED UNIVERSITY STUDENTS

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Introduction: Behavioral risk factors (BRFs) for cardiovascular disease (CVD) are well established: tobacco use, alcohol abuse, physical inactivity, and poor diet^{1,2}. Sleep quality is emerging as an additional BRF². Together, these BRFs are responsible for considerable modifiable and preventable risk for CVD¹. Addressing multiple BRFs may improve other health variables related to CVD, such as depression, oxidative stress, and cognitive ability^{3,4,5}. We previously suggested that emerging adulthood is a crucial stage of life for addressing BRFs for CVD¹. Intervention during this stage could have a profound effect on future health behaviors and CVD risk. A clustering effect between BRFs has been suggested^{2,6}, but little research has examined how BRFs are related during emerging adulthood. This study examined the relation between smoking behavior, sleep, physical activity, and diet in college-aged university students.

Methods: The sample (N = 89) was aged 19.38 ± 1.43 , 75.3% female, and 78.7% Caucasian. Participants were asked their weekly cigarette smoking frequency. Participants completed self-report inventories of physical activity (Global Physical Activity Questionnaire: GPAQ), dietary intake (Starting the Conversation Questionnaire: STC), and sleep quality (Pittsburgh Sleep Quality Index: PSQI). Correlation analyses were performed to determine the relation between smoking behavior, physical activity, diet, and sleep.

Results: Total PSQI score was positively associated with GPAQ total score, $r = .23$, $p = .03$. GPAQ total score was negatively related to STC score $r = -.244$, $p = .021$. There were no other significant correlations between BRF measures (see Table 1).

Discussion: Besides a negative relation between diet and total physical activity, BRFs were not related. Thus, our data does not support a clustering effect of BRFs in college-aged students. In other words, participants who showed healthy scores on one measure did not necessarily show healthy scores on another, except for diet and physical activity. If true, future efforts may need to target individual BRFs separately during emerging adulthood, as opposed to general BRF interventions. One notable limitation was that alcohol data was not collected, as our sample was under 21. Future research should explore why BRFs related to cardiovascular risk are largely unrelated during emerging adulthood.

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MATERNAL EDUCATION IS RELATED TO UNHEALTHY EATING HABITS IN MIDDLE SCHOOL GIRLS

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Introduction: Poor eating patterns are one of the factors that contribute to obesity and chronic disease, particularly among ethnic minority groups. Parents have an important influence on their child's eating habits, as they usually determine which food is available at home and they model dietary behaviors. Maternal education can influence lifestyle habits and support positive health behaviors in families. The purpose of the current study was to investigate whether maternal education is related to their daughters' eating habits.

Methods: The relationship between maternal education (M = 14.95 years, SD = 4.18) and dietary habits was investigated in 338 middle school age girls (M = 11.8 years; 76.3% minority status) enrolled in a 3-week summer program that emphasized the importance of a healthy lifestyle. Maternal education was reported by parents prior to program onset. At baseline, participants were administered an eating behavior survey to assess dietary habits, which included an 8-item healthy eating (0–24) and a 13-item unhealthy eating (0–39) subscale.

Results: Multiple regression analysis indicated that maternal education, age, BMI, and ethnicity are not significantly related to healthy eating habits. However, in a separate multiple regression analysis, years of maternal education, age, BMI, and ethnicity accounted for significant variability in baseline unhealthy eating habits (M = 8.86, SD = 8.18), adjusted $R^2 = .075$, $F(6, 331) = 5.55$, $p < .001$. Results indicate that, controlling for age, ethnicity, and BMI, for every one-year increase in maternal education, unhealthy eating at baseline decreased by .24 points, $t(337) = -2.30$, $p < .05$, 95% CI [-.451, -.035]. Ethnic differences were also found, with Black girls engaging in more unhealthy eating habits, compared to Hispanic girls, controlling for the remaining predictors ($b = 4.17$).

Conclusion: The results of the present study show that maternal education influenced unhealthy eating habits but did not influence healthy eating habits. These findings underscore the role that maternal education plays in children's health outcomes. There are several pathways through which maternal education can influence children's dietary habits, including health knowledge acquisition, food provided at home, and modeled health behavior. Given the importance of maternal education, it may be important to develop interventions aimed to improve health knowledge in parents with low education backgrounds to help reduce chronic disease risk in children.

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EXAMINING THE ROLE OF INTUITIVE BELIEFS ABOUT RISK IN THE RISK PERCEPTION-HEALTH BEHAVIOR RELATIONSHIP

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Purpose: Individuals' conceptualization of their disease risk affects their health behavior engagement. Studies have focused primarily on deliberative (cognitive; quantitative) risk perceptions, but these effects on health behaviors are modest. Individuals may also determine risk using more intuitive (gut-level; automatic) risk beliefs. We examine whether deliberative risk perceptions are related to intuitive risk beliefs, compare their relative contributions to health behavior engagement, and describe their relationships with demographic variables and worry.

Methods: 1002 participants from a nationally-representative panel (82% white, 51.8% female, age 49.8) completed a cross-sectional survey assessing demographics, health behaviors (smoking, red meat consumption, and physical activity), and deliberative risk perceptions (absolute and comparative risk), intuitive risk beliefs (cognitive causation and unknowability), and worry regarding diabetes and colorectal cancer. Cognitive causation is believing that thinking about disease risk tempts fate and increases the chances of developing the disease. Unknowability is believing there is no way of knowing who will contract the disease. Data were analyzed using hierarchical linear regressions and ANOVAs controlling for demographics.

Results: Intuitive risk beliefs and deliberative risk perceptions are positively related. Controlling for demographic variables, intuitive risk beliefs are related to health behaviors above and beyond deliberative risk perceptions. Diabetes risk unknowability was related to smoking ($F=0.08$; p

Conclusions: Intuitive risk beliefs seem to account for more variance in health behaviors than traditional cognitive deliberative risk perceptions. Intuitive risk beliefs also seem to be a better predictor than an affect-only construct such as worry. It is important to consider intuitive risk beliefs in future health behavior interventions.

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B080

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A BRIEF INTERVIEW PROMOTES AUTONOMOUS MOTIVATION TO DONATE BLOOD

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BACKGROUND: Autonomous motivation is associated with enhanced behavioral intent and engagement. Thus, interventions fostering autonomous motivation to donate blood may bolster the safety and security of the national blood supply. Indeed, interventions informed by the principles of Motivational Interviewing (MI) have been associated with increased donor motivation and behavior, but little is known concerning the specific mechanisms that make these interventions effective. The purpose of the present study was to compare the effects of two distinct, MI-informed interventions on autonomous motivation to donate blood and to evaluate the treatment integrity of both interventions.

METHODS: Participants ($N = 130$) were randomly assigned to participate in one of two brief interventions: 1) a change talk interview, or 2) a decisional balance interview. The change talk interview elicited motivation to donate blood by asking evocative questions, exploring personal goals and values, using importance, confidence, and likelihood rulers, and querying extremes. Alternatively, the decisional balance interview explored perceived benefits and drawbacks of both giving and not giving blood. Both interviews incorporated MI-consistent techniques, such as reflections, summaries, and asking for permission before providing information. Participants completed a measure of autonomous motivation immediately before and after the interview. Interviews were audio recorded, and a random 50% of the interviews were assessed for MI integrity by two independent raters.

RESULTS: With respect to autonomous motivation, a repeated measures ANOVA revealed a significant time by group interaction ($p < 0.01$), which reflected significantly greater increases in autonomous motivation from pre- to post-interview among participants in the change talk group compared to the decisional balance group. MI integrity ratings indicated high levels of empathy and partnership across both interview groups; however, t -tests indicated that the change talk interview was associated with significantly higher scores on the domains of cultivating change talk ($p < 0.01$) and softening sustain talk ($p < 0.01$) relative to the decisional balance group.

CONCLUSIONS: Evocation of change talk is associated with increased autonomous motivation to donate blood. Future work should examine the relationship between MI integrity ratings and blood donation behavior.

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B081

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A MULTIMODAL EXAMINATION OF IMPULSIVITY AS A PREDICTOR OF OUTCOME FROM TREATMENT FOR BULIMIA NERVOSA

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Outcomes from treatment for bulimia nervosa (BN) are suboptimal, with up to 40–60% symptomatic at post-treatment. To improve outcomes, it is imperative to identify predictors and moderators of outcome. Impulsivity, i.e., the tendency to act rashly without forethought, is an established predictor of BN. Yet, only one study has examined impulsivity as a predictor of outcome from treatment for BN, and no studies have utilized behavioral measurements in doing so. We examined whether baseline levels of delay discounting (i.e., the tendency to prioritize short-term over long term reward) and inhibitory control (i.e., the ability to withhold an automatic response) predicted outcomes from treatment. Individuals with BN (current $n=23$; data collection ongoing) were administered a food-specific and neutral Stop Signal Task and a monetary delay discounting task at baseline of a behavioral treatment for BN. Given evidence that “rapid” (i.e., in four weeks) response is a robust indicator of later outcomes, outcomes were assessed at four weeks and post-treatment (20 weeks) using the Eating Disorders Examination Questionnaire. Poorer food-specific ($r=.47$, $p=.02$) and neutral ($r=.50$, $p=.02$) inhibitory control, but not delay discounting ($r=-.10$, $p=.63$), predicted fewer decreases in binge episodes at week 4. No indices of impulsivity appeared to be strongly associated with changes in self-induced vomiting at week 4 ($r=.05-.27$, $ps=.23-.84$). Only 15 participants (projected $n=25$) have completed treatment, and as such, we rely on effect sizes for interpretation of 20-week data. Prioritizing long-term reward was associated with greater decreases in binge eating at 20 weeks ($r=.48$, $p=.07$). Additionally, poorer food specific ($r=.41$) and neutral inhibitory ($r=.41$) control were associated with fewer decreases in vomiting at 20 weeks ($ps=.11-.13$). Although samples sizes are small, results suggest that several facets of impulsivity predict treatment outcomes for BN. The ability to withhold automatic responses may be especially crucial for early success in treatment, which requires individuals to set and follow a structured eating plan. On the other hand, the ability to long-term reward may be more important for adhering to this eating plan over the course of treatment. Interestingly, inhibitory control may be important for refraining from self-induced vomiting. With replication, results could indicate that the development of impulsivity-focused treatment components are warranted.

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AFFECTIVE ASSOCIATIONS WITH THE HPV VACCINE RELATE TO PAST VACCINE BEHAVIOR AND FUTURE INTENTIONS

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Introduction: HPV is the most commonly sexually transmitted pathogen in the world, with strains 16 and 18 responsible for cervical, anal, and oropharyngeal cancers. As such, routine vaccination is advised for males and females starting at age 11 to prevent future HPV-associated cancers. As policies have recently shifted to cover early adolescents, young adult ages 19–26 are still eligible for the HPV vaccine but are less likely intervention targets and coverage is low with 41.6% of women and 10.1% of men receiving at least one dose in 2015. While HPV vaccine decision making research has traditionally focused on health beliefs, emotions, and stigma related to the virus, this work examines how affective associations with the HPV vaccine relate to past vaccine behavior in young adults and, for those not already vaccinated, future vaccination intentions.

Methods: Participants ages 18–26 ($n=151$) received an emailed flyer disseminated through student organizations at a state university. Interested participants completed an online survey assessing positive and negative affective associations with the HPV vaccine, their own HPV vaccination behavior, and for those unvaccinated, intentions to vaccinate.

Results: More positive affective associations with the vaccine were associated with a greater likelihood of having been vaccinated ($OR=1.73$, $p<0.01$). Negative affective associations were somewhat associated with decreased likelihood of receiving the HPV vaccine, but this relation was only marginally significant ($OR=0.57$, $p=0.05$). Looking at negative affect items individually; however, embarrassment and shame associated with the vaccine predicted decreased likelihood of vaccination ($ORs=0.52$, $ps<0.05$). Only positive affective associations were related to future intentions to get the HPV vaccine ($b=0.41$, $p<0.01$).

Discussion: For young adults, positive affective associations with the HPV vaccine were related to both past vaccine behavior and future intentions. Such affective associations may play a role in whether young adults choose to get vaccinated against HPV. Interventions targeted to this population should include messages that associate getting vaccinated with positive feelings, such as feeling relaxed to have reduced one’s personal risk of getting HPV-related cancer.

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AWARENESS OF DNA TESTING FOR HEALTH ISSUES IN A NATIONALLY REPRESENTATIVE SAMPLE

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Background: DNA testing awareness is changing quickly, dictating a need for understanding current patterns of awareness across psychosocial and demographic factors. This study examined levels and correlates of Americans' DNA testing awareness.

Method: Data were obtained from the nationally representative 2017 NCI Health Information National Trends Survey (HINTS). Data from 3,285 adult participants were used (mean age = 49, 51% female, 66% Non-Hispanic White, 16% Hispanic, 10% Non-Hispanic Black, 6% Non-Hispanic Asian) to examine whether participants had heard or read about DNA testing for health reasons (i.e., DNA testing awareness) as the primary outcome; awareness of specific tests was a secondary outcome. Multivariable logistic regression was used to determine correlates of DNA testing awareness. Potential correlates included Internet use (yes/no), seeking health information (yes/no), cancer fatalism (categorical), perceived cancer risk (continuous), family cancer history (yes/no), and demographics (health insurance status, age, general health status, gender, education, income, and combined race/ethnicity).

Results: Over half the sample (57%) endorsed DNA testing awareness. Higher income ($p < .01$), better self-reported general health ($p < .05$), and race/ethnicity ($p < .05$) were significantly associated with DNA testing awareness. In the multivariable model, Asians had lower odds of being aware of DNA testing ($OR = .42$, $p < .01$) than Whites; no differences were observed for other racial/ethnic groups. Significant psychosocial correlates were also identified; those reporting DNA testing awareness were more likely to use the Internet, seek health information, have lower cancer fatalism, and higher perceived cancer risk ($ps < .01$; adjusted model $R^2 = .16$).

Of those aware of DNA testing, most had heard or read about tests determining risk or likelihood of getting a particular disease (88%), or passing on inherited disease to children (87%). Few were aware of tests determining how a disease should be treated (41%), or which drug(s) may or may not work for an individual (43%).

Conclusions: Results demonstrate the strong contribution of psychosocial and demographic factors to DNA testing awareness. Odds of awareness were lower in Asians, demonstrating the need for outreach. Awareness of predictive uses of genetic testing was doubled compared to awareness of precision medicine uses. While more research is needed, this study provides a current snapshot of Americans' DNA testing awareness.

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HEALTH LITERACY, SOCIOECONOMIC STATUS, AND ENGAGEMENT IN SHARED DECISION-MAKING IN CANCER

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Objective: Engaging patient, caregiver, and clinician stakeholders in shared decision-making is a national priority. This study aimed to evaluate whether health literacy explained increased engagement in shared decision-making while accounting for variation in socioeconomic status.

Method: Participants with a history of cancer ($n = 413$) completed a survey battery between July and December 2017 that included validated measures of health literacy, financial strain, and decisional engagement. First, we examined zero-order correlations among health literacy, level of engagement in shared decision-making, five indicators of socioeconomic status, demographics, and health history. Then, a hierarchical multiple regression analysis was conducted to examine whether health literacy explained increased engagement in shared decision-making, over and above the effects of socioeconomic status and other key demographic and health covariates included in the model.

Results: Increased health literacy was significantly associated with increased engagement in shared decision-making ($r = .35$, $p < .001$). Across three indicators, higher socioeconomic status was also associated with increased engagement in shared decision-making ($rs = .11-.12$, $ps = .02-.03$). Health literacy continued to explain increased engagement in shared decision-making ($\Delta R^2 = .10$, $\beta = .33$, $p < .001$) over and above the contribution of socioeconomic status and other covariates.

Conclusion: Findings demonstrate the importance of health literacy in shared decision-making, even when accounting for multiple indicators of socioeconomic status. To better engage patients in the shared decision-making process, clinicians and other stakeholders should examine interventions to improve health literacy for key decisions.

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HYPOTHETICAL CASH BENEFIT PARTICIPATION AND TIME OF THE MONTH EFFECTS ON DELAY DISCOUNTING

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People tend to discount the future in favor of immediate rewards. This process of delay discounting is robustly related to income, as people with less income are more likely to focus on immediate needs rather than allocate time or expenses for future use. People on public assistance often rely on limited funds to satisfy basic needs, and in most instances, these funds are provided on a monthly basis. Research suggests that these funds are spent unevenly throughout the month, with the heaviest spending in the beginning of the month and fewer resources available as people get near to their next allotment. It is possible that delay discounting may be an important driver of this phenomenon for people with low income. This hypothesis was tested in a crowdsourced sample of 425 18-55 year-old adults. Delay discounting was measured for participants randomized to hypothetical conditions that varied in whether they were on assistance or had a stable job crossed with whether they had just received their benefits/paycheck or were in the last week of the month. Results showed that people discounted the future more if they were on assistance than if they had a steady job, and discounted the future more if they were in the last week of the month than after they had received their last benefit transfer/paycheck. These results suggest that delay discounting may be an important mechanism that helps understand the challenges that low income people face as they attempt to allocate resources in a constrained environment. The ability to modify discounting of the future and shift priorities from immediate needs to important long-term goals or the ability to implement policy change regarding benefit disbursement could have a great impact on decisions made by people on public assistance.

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PROSPECTIVE ASSOCIATION BETWEEN PARENTAL MOTIVATION AND ADOLESCENT HPV VACCINATION

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Objectives: Self-Determination Theory (SDT) posits three types of motivation influence behavior: external motivation (based on maximizing rewards or demands), introjected motivation (based on avoiding guilt/shame about others' views of oneself), and autonomous motivation (based on personal values). Parental decisions about the human papillomavirus (HPV) vaccine could be influenced by all three types—to please their child's doctor (external motivation), to avoid feeling guilty (introjected motivation), or because it aligns with one's own values (autonomous motivation). We examined patterns of association between motivation types and HPV vaccination.

Methods: As part of a larger project developing an intervention to promote HPV vaccination, parents (N=183) of unvaccinated adolescents with upcoming appointments during 2015–2016 at safety-net clinics in Dallas, TX completed a telephone-administered survey including an 8-item measure of parental motivation for adolescent vaccination. After 12 months, we reviewed electronic medical records to obtain HPV vaccination coverage data. Multinomial regression models were examined to determine which motivation types were associated with 1-dose coverage (0 doses vs. 1 dose), 3-dose coverage (0 doses vs. 3 doses), and differences among those who initiate but fail to complete the series (1 dose vs. 3 doses).

Results: Results indicate autonomous motivation was a marginally significant predictor of 1-dose coverage (OR = 2.49; 95%CI: [.93, 6.67], $p = .069$) and a significant predictor of 3-dose coverage (OR = 3.57; 95%CI: [1.25, 10.22], $p = .018$). Autonomous motivation, however, did not distinguish vaccine series completers from those who only initiated the series (1 dose vs. 3 doses; $p = .566$). There were no significant effects of introjected or external motivation on any of the HPV vaccination outcomes—1-dose- or 3-dose coverage ($ps > .110$), or among those who initiated but did not complete the vaccine series ($ps > .084$).

Conclusion: Findings support the utility of distinguishing underlying motivation for adolescent HPV vaccination. Autonomous, rather than introjected and external, motivation was positively associated with receipt of the 3-dose series. Thus, intervening on parents' perceptions about the ways in which the HPV vaccine is important and beneficial to their child's health may be an effective mechanism for increasing completion of the vaccine series.

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THE VALUE OF SHARED DECISION MAKING AIDS FOR PATIENTS ELIGIBLE FOR TRIAL OF LABOR AFTER CESAREAN SECTION

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Background: Shared decision-making (SDM), where providers and patients come to a dyadic decision about a medical test or procedure, is an emerging practice in medicine, with emphasis on decisions that lack a clear medical recommendation. One such decision occurs among pregnant women who have previously had a cesarean section, and who must decide whether to have a second cesarean-section (C-section) or trial labor. The Health Care Authority of Washington state recently certified tools for trial of labor after cesarean section (TOLAC)/vaginal birth after cesarean section (VBAC)/C-Section SDM study. This study is part of an evaluation of the implementation of shared decision-making tools (booklet/pamphlet) used at three pilot sites in Washington State.

Methods: Qualitative semi-structured interviews were conducted with X providers and X patients involved in this study at baseline and 6 months after implementation. Interviews were audio-recorded and transcribed. Transcriptions were coded by two research assistants using a codebook developed before interviews were conducted.

Results: While providers consistently reported they would have preferred online tools that could be sent through electronic medical records, patients reported that they valued having a paper copy in their hands to look at. Both patients and providers valued the tool and reported high levels of satisfaction. Most providers and patients indicated that the tools used were balanced, not leaning one way or another. Providers expressed hope in expanding shared decision making statewide, however, there was also caution, specifically that resources (funds for electronic medical record upkeep, provider buy-in) are low.

Discussion: When discussing medical decisions that do not have one clearly superior option, SDM between patient and provider can work in clinical practice. It is important to understand the coverage and intent of shared decision making, both on the provider and patient side. Providers, especially OBGYNs, are often overworked, yet the value of SDM for providers is in time-savings in clinical practice. Meanwhile, there is a movement among the patient population to take increasing interest and accountability for their own health, and SDM is one way to really advance patient roles in the process. SDM allows providers to educate patients at a level not formerly possible while enabling patients the opportunity to really think about, and digest information, allowing for a thoughtful, confident decision, and increased satisfaction with medical care.

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A PILOT STUDY TO DESIGN AND TEST HPV VACCINE EDUCATION AND DECISION SUPPORT TOOLS FOR AFRICAN AMERICAN PARENTS

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Objective: This pilot study was designed to develop a lay health worker (LHW)-led HPV vaccine education session and an HPV vaccine parental decision support tool (DST) for African Americans, and to test the impact of both on HPV vaccine decision making and discussions with a healthcare provider (HCP) through a randomized controlled trial (RCT).

Methods: Participants were recruited in community settings in metro Detroit and 70 women were screened for eligibility, which included having at least one unvaccinated child and no previous in-depth vaccine discussion with an HCP. Of these, 27 (39%) were eligible, consented, completed baseline assessments, and were randomized to the education alone group (ED) or education plus DST group (ED+DST). Education and DST distribution took place in community-based sites. Participants completed a Time 2 (T2) survey at one week assessing knowledge and decision-related variables, and a Time 3 (T3) survey at two months assessing initiation and quality of parent-HCP discussions. Qualitative (QUAL) components were included at T2 and T3 to assess responses to the interventions.

Results: At baseline, 75% of participants reported hearing “a little/nothing/almost nothing” about HPV or the vaccine. Only 30% reported HCP recommendation of the vaccine. Compared to baseline, there were statistically significant improvements in HPV knowledge in both ED (BL μ = 0.53, T2 μ = 0.83, p=.008) and ED+DST (BL μ = 0.39, T2 μ = 0.83, p=.002) groups. Both groups responded positively to the education session based on QUAL data but ED participants reported wanting more information on vaccine risks and side effects and 70% reported the DST was as or more useful than the education session. At T2, 40% of the ED+DST group had decided to vaccinate their child, compared to 54.5% of ED participants, increasing at T3 to 75% and 87.5%, respectively. Across both groups of participants, those who were undecided at T2 but decided to vaccinate by T3 (30%), STD protection was the most commonly cited reason. All participants who remained undecided at T3 across both groups (25%) wanted to talk to a provider before making a final decision. At T3, 47% of all participants had not discussed the vaccine with an HCP yes, but intended to do so in the next 2 months.

Conclusions: Findings suggest that the degree of information received about the HPV vaccine, including its benefits and risks, and HCP recommendation play key roles in the decision making process. Additional research examining parent-focused interventions in promoting HPV vaccination is needed.

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COST EFFECTIVENESS OF A COMMUNITY-BASED CARDIOVASCULAR DISEASE PREVENTION INTERVENTION IN MEDICALLY UNDERSERVED RURAL AREAS

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Background. Community-based programs aimed at reducing the risk of cardiovascular and other chronic diseases in rural communities are an important strategy to address rural health disparities. A rigorous understanding of the costs associated with running these programs and the value of the health outcomes realized by program participants can provide decision makers with important information about adoption and implementation.

Intervention. Sixteen medically underserved rural towns in Montana and New York were randomized to one of two six-month intervention programs: a twice-weekly experiential learning health behavior change program focused predominantly on diet and physical activity (aerobic and strength training) related behaviors, *Strong Hearts, Healthy Communities (SHHC)* (n=101) or a monthly healthy lifestyle education-only, minimal intervention control program (n=93). Females who were sedentary, overweight or obese, and aged 40 years or over were recruited to the study.

Objective. The objective of this study was to conduct cost-effectiveness analyses of the SHHC program compared to the control program in terms of change in Simple 7, a gold-standard composite cardiovascular disease risk score, as well as body weight.

Analysis. The estimated incremental cost-effectiveness ratio (ICER) was calculated with respect to changes in Simple 7 and body weight by dividing the incremental costs (average cost of resources – e.g. labor, space, food, equipment, curriculum printing – minus average resource cost for the education only comparison program) by incremental effectiveness (Simple 7 score improvement and weight loss).

Results. SHHC cost \$536 per participant, with an average improvement of Simple 7 score of 0.93 points and an average weight loss of 4.6 pounds (2.08 kg). The ICER was \$577 per Simple 7 point increase and \$117 per pound [\$258 per kilogram].

Conclusion. The cost of the SHHC intervention was comparable to similar lifestyle behavior change programs. The ICER for SHHC in terms of weight loss tended to be similar or slightly higher than for other weight management programs; a comparison couldn't be found for Simple 7 ICER. These data, and similar types of analyses for community programs, are critical for program implementation and dissemination considerations.

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DECISION-MAKING PRACTICES SURROUNDING CHOOSING A VAGINAL BIRTH AFTER PRIOR CESAREAN DELIVERY

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Background: The choice to have a vaginal birth after cesarean section (VBAC) is a contested healthcare decision. While research indicates that VBAC is a safe and advantageous option for most persons, rates of this procedure have decreased nationwide. There is limited research exploring the lived experiences of individuals who choose VBAC and critically examining the contexts in which these decisions are made.

Methods: In this prospective study, a sample of sixteen participants who previously underwent a C-section were interviewed pre- and postpartum. Semi-structured interviews were used to inquire about their experience with their previous C-section, their decision-making process regarding their current birth plan with a VBAC, and their satisfaction with their birth experience postpartum. Data were analyzed using thematic analysis.

Results: The majority of participants described their previous C-section as a negative experience, with seven participants saying the experience left them traumatized. Participants discussed the following factors that influenced their decision to have a VBAC: 1) strong desire for a vaginal birth, 2) vaginal birth seen as “healthier” for both mother and child, 3) quicker recovery, and 4) desire to maintain control during birth. While all participants chose to have a VBAC before the interview, nearly all participants maintained a flexible attitude towards birth outcomes. Nine (56%) participants had successful VBACs and the majority of women (81%) described their birth experience as satisfactory.

Conclusions: Main factors in deciding to attempt a VBAC included negative experience with previous C-section, and belief that vaginal birth is optimal for both mother and child. Women were able to maintain a sense of control before and during childbirth through a stance of planned flexibility, which allowed women to find their birth experience positive even when women were not able to have a VBAC. Future studies should explore how attitudes towards birth choice, including attitudes toward medicalization and natural childbirth, influence decision-making and birth satisfaction.

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B092

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DIFFERENCES BETWEEN DECISIONAL CONFLICT IN MEN WITH EARLY STAGE PROSTATE CANCER AND THEIR PARTNERS

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Background: Advancements in understanding the natural progression of low grade prostate cancer have led to “active surveillance” protocols where patients can delay active treatment. Given that this may be a difficult decision for patients and their partners, it is important to understand the factors that contribute to a patient’s treatment decision.

Purpose: This study aims to collect information on how patients who are eligible for active surveillance and their partners make treatment decisions.

Methods: Patients and their partners were recruited from the clinic at the Urology Service at Memorial Sloan Kettering Cancer Center (MSK). Recruitment is ongoing. Eligible patients must have early stage prostate cancer, eligible for active surveillance, and have not made a treatment decision. The patient may identify a partner to participate in the study. Enrolled participants completed assessments prior to treatment decision, after treatment decision and every 6 months for 2 years. Outcome data explored factors such as decisional conflict, illness perception, and patient assessment of their doctor’s treatment suggestion.

Results: 114 patients and 50 partners have completed the baseline and six month follow-up questionnaire. Preliminary results showed that 26% of patients chose active treatment over active surveillance. Patient total anxiety and prostate cancer related anxiety was more likely to decrease if treatment decision was more strongly aligned with the patient perception of the doctor’s treatment suggestion than if not. After a treatment decision was made, patients’ decisional conflict decreased significantly ($p < 0.001$), while partners’ decisional conflict increased significantly ($p = .025$).

Conclusion: Preliminary results suggest that although patients’ decisional conflict may decrease after a treatment decision is made, partners’ decisional conflict increases. Further research must be conducted to explore the cognitive and affective treatment decision making processes among prostate cancer patients eligible for active surveillance and their partners. Final analysis will occur once all data has been collected.

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EXPLORING STRATEGIES TO ENGAGE HISPANIC PATIENTS IN SCREENING FOR A DIABETES PREVENTION PROGRAM AT A COMMUNITY HEALTH CENTER

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Background: Increasing early identification and engagement of prediabetic Hispanic individuals in diabetes prevention programs is a public health priority as this ethnic minority population is disproportionately affected by diabetes and obesity.

Objective: To explore factors influencing patients' willingness to attend screening for a diabetes prevention program being offered at a federally qualified community health center (FQHC).

Methods: Semi-structured phone interviews, based on the Health Belief Model, were conducted with patients who had been invited to attend a free screening at the FQHC. Purposeful random sampling was used to recruit patients who: 1) declined to attend a screening (n=13), 2) agreed, but did not attend (n=12), and 3) attended (n=11). A general inductive approach was used to identify key themes and group them into categories.

Results: A total of 36 Hispanic adults (21 women) were interviewed. *Perceived Susceptibility:* Individuals who declined to attend a screening considered themselves to be healthy and not at risk of chronic diseases, which was reinforced by a recent check-up. Those who agreed but did not attend a screening also considered themselves healthy, but at risk for chronic diseases. Attendees perceived themselves as unhealthy and at risk for chronic diseases. *Perceived Severity and Benefits:* Lack of awareness of health status was considered a major consequence of not participating in the screening and being aware of potential problems with their health as the main benefit. *Perceived Barriers and Cues to Action:* Individuals perceived the schedule offered by the FQHC as the biggest barrier to participating in health screenings. Thus, providing more convenient appointments was perceived as a key motivator to increasing participation. *Self-Efficacy:* Individuals who declined to attend a screening reported feeling confident in their ability to prevent diabetes or other cardio-metabolic diseases and not needing help in making lifestyle changes as compared to those in the other groups.

Conclusions: Patients that attend health screenings, versus those that do not, exhibit different beliefs and attitudes regarding their health status and their risk for chronic diseases. Future screening efforts should consider these different viewpoints, offer flexible appointment times, and emphasize the benefits of early detection of diabetes to enhance the participation of Hispanic patients in diabetes screening.

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FACTORS AFFECTING SURGICAL DECISIONS IN NEWLY-DIAGNOSED YOUNG WOMEN WITH EARLY-STAGE BREAST CANCER

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Background: Young women with breast cancer often have concerns and priorities (e.g., fertility, impact on young family, starting a career) attributable to their life stage. Consequently, young women may consider their surgical options differently than older women. Using a series of key informant interviews, we sought to gain an in-depth understanding of how newly-diagnosed young women approached decisions about breast cancer surgery.

Methods: We screened institutional clinic lists and approached newly-diagnosed women with non-metastatic (Stage 0-III) breast cancer diagnosed at age ≤40 who had not yet undergone surgery and invited them to participate in a one-time interview study. Interested women who were eligible were interviewed (in person or via phone) using a semi-structured interview guide between February and October 2016. Interviews were recorded and transcribed with identifiers removed. Emergent themes were identified by thematic content analysis using NVivo 11.

Results: Among 20 participants, 20% (4/20) identified as Hispanic or non-White; almost all (18/20) were partnered; median age at interview was 37. Women spoke of how a desire to breastfeed, concerns about how an extended recovery would affect caring for young children and returning to work factored into their surgical decision and in some cases, contributed to decisional conflict. In weighing the pros and cons of different types of surgery, one participant spoke of wanting to "choose the easiest, less invasive...that would be the fastest for me to be able to be back to my children" while also acknowledging that a lumpectomy "doesn't feel like... sufficient surgery." Another described how she "worried initially...about the recovery time with the double mastectomy because I do have young kids so that was...daunting." Several women also spoke of their worry of leaving cancer cells behind while others cited the need for continued surveillance, including anxiety surrounding frequent mammograms and lack of trust in imaging, as a consideration during the decision process.

Conclusions: Surgical decisions can be complex for young women with breast cancer due to factors specific to their life stage affecting decision-making. Developing novel, targeted interventions that deliver relevant information and address these issues may reduce decisional conflict, ensuring decisions are made in a supportive and patient-centered setting.

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FACTORS INFLUENCING U.S. PHYSICIANS' DECISION TO PROVIDE BEHAVIORAL COUNSELING

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Objective: Prevention and treatment of non-communicable diseases is critical due to high costs of healthcare and increasing prevalence. Historical trends suggest physicians underperform in behavioral counseling (exercise, diet/nutrition, or weight loss). This study looked at physicians' decision-making process by examining sociological factors that influence provision of behavioral counseling.

Method: Using the Eisenberg model of physician-decision making, we analyzed data from the 2001–2011 National Ambulatory Medical Care Surveys to obtain national estimates of provided behavioral counseling in physician offices. The Eisenberg model posits physician characteristics, patient characteristics, physician-healthcare system interactions, and the physician-patient relationship impact physician decision-making to provide treatment. Weighted, multiple logistic regressions were utilized to determine the likelihood of a physician delivering behavioral counseling.

Results: Sociologic factors significantly influenced physicians' decision to provide behavioral counseling. Diet/nutrition counseling was provided at 13.43% of visits, exercise counseling was provided at 9.29% of visits, and weight loss counseling was provided at 3.66% of visits. Exercise and diet/nutrition counseling was not as likely to be provided in ensuing years despite increasing rates of non-communicable disease. Weight loss counseling was more likely to be provided compared to previous years. Highlighted findings of factors linked to a higher likelihood of providing behavioral counseling include: seeing a primary care physician, patients with visits for chronic problems, and patients with visits for preventive care. Patients who had been seen before by a doctor were less likely to receive diet/nutrition or weight loss counseling.

Conclusion: Behavioral counseling continues to be underutilized, and specific sociologic factors influence physicians' provision of counseling. Physicians should consider factors that may influence their decision to provide behavioral counseling. Future research should focus on finding the most effective behavioral counseling training and provision, while also considering methods to improve physician rates of counseling.

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LONGITUDINAL DETERMINANTS OF SEDENTARY BEHAVIOR AMONG COLORECTAL SURVIVORS

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Introduction: Colorectal survivors spend approximately 9 hours per day in sedentary behavior (SED), even though recommendations to reduce sitting time have been released. While there is extensive research into the health detriments of SED, less is known about the determinants of SED, specifically among cancer patients. In this longitudinal study, we examined determinants of SED among colorectal survivors who participated in a 12-month randomized controlled trial for physical activity promotion.

Methods: Male and female colorectal survivors (Stage 0–3) within 5 years of diagnosis were randomized. SED was objectively measured using the Computer Science and Applications, Inc. monitor (CSA model 7164) at baseline and 3, 6 and 12 month follow-ups. Additionally, fitness (Treadmill walk test), mood (Profile of Mood States, POMS), body fat (Bioelectrical Impedance Analysis) and cognitive and behavioral processes of change for physical activity (Marcus et al., 1992) were assessed at baseline and follow-ups. Using Latent Class Analysis (LCA), we identified 4 distinct subgroups of the sample with respect to SED over one-year. Classes were compared using Analysis of Variance with respect to baseline data including demographics, fitness and psychosocial constructs (i.e., mood and processes of change). Finally, class was used as a predictor of change in psychosocial outcomes over 12-months using a series of generalized linear models controlling for group assignment.

Results: 46 colorectal survivors (mean age = 57 years old, 57% female, 70% Stage 0–2, 30% Stage 3 disease) were randomized. Data supported a 4 class model: 22% who had high and sustained min/week of SED over 12 months (Class 1), 24% who had low and sustained SED (Class 2), 33% who had increasing SED over time (Class 3) and 22% who had high SED through 6 months followed by a marked decreased through 12 months (Class 4). There were significant between-class differences with respect to gender, baseline mood, fitness (time to complete 1-mile treadmill walk), body fat, and cognitive processes (p 's<0.05). Females were less likely to be in Class 1; Total Mood Disturbance (POMS) was significantly lower at baseline in Class 2; and baseline cognitive processes were highest and fitness and body fat were significantly worse at baseline for Class 3. Finally, class was a significant predictor of changes in fitness, mood and moderate-to-vigorous physical activity (p 's<.05) over 12 months.

Conclusions: Characteristics such as gender, fitness, body fat and psychosocial constructs may be useful variables to help guide researchers and practitioners in their efforts reduce SED among survivors.

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PATIENT ACTIVATION AS A MEDIATOR FOR TREATMENT SATISFACTION & DECISIONAL CONFLICT AMONG PATIENTS APPROACHING ESRD

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Decisional conflict is the state of uncertainty regarding treatment choices and lack of patient confidence in making treatment decisions. Patients with chronic kidney disease (CKD) approaching end-stage renal disease (ESRD) experience a high level of decisional conflict. They are tasked with selecting a form of renal replacement therapy that is right for them, but are often not provided with sufficient support and information regarding the different treatment options prior to renal failure. It is necessary to identify ways to better support patients making such a life-altering medical decision. Treatment satisfaction is an important predictor of decisional conflict, as it is associated with disease- and treatment-related knowledge that can inform decision-making. The present study explored additional psychosocial and health-related factors that mediated the relationship between treatment satisfaction and decisional conflict in 64 patients approaching ESRD. It was predicted that patient activation mediated this relationship. Measures included a Kidney Disease Treatment Questionnaire (KDTQ) developed by the authors to measure patients' understanding of CKD and their satisfaction with their CKD-related care, the Decisional Conflict Scale (DCS), and the Patient Activation Measure Short Form (PAM-SF). There was a high level of decisional conflict in this sample, with 62.5% of the patients ($n = 40$) having "decision-making difficulty" ($DCS \geq 25$) and 40.6% of the patients ($n = 26$) having decision delays and/or negative perceptions about the decision ($DCS > 37.5$). Initial linear regression analyses were performed with DCS as the outcome variable, and demographic and clinical variables, KDTQ, and PAM-SF, as predictors. No significant results involving demographic and clinical variables were observed; however, there were significant relationships between the KDTQ, PAM-SF, and DCS. Following these analyses, the model was entered into PROCESS to test for a significant mediational relationship. A bootstrapping procedure based on 5,000 samples was used to estimate the standard error of the indirect effect of KDTQ on DCS with PAM as the mediator. The results confirmed the indirect effect was statistically significant ($B = -.88$, $SE = .39$, bias corrected 95% $CI = -1.94, -.23$). While the link between treatment satisfaction and decisional conflict is well established, these results indicate this relationship can be explained by patient activation, a potentially modifiable process. Interventions to reduce decisional conflict among patients approaching ESRD should be focused on encouraging patients to become actively involved in their care.

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MERITORIOUS AWARD WINNER

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PATTERNS OF CHANGE OVER TIME FOR PSYCHOSOCIAL CONSTRUCTS IN RESPONSE TO A CULTURALLY TARGETED COLONOSCOPY INTERVENTION

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Introduction: Colonoscopy can reduce mortality from colorectal cancer (CRC), yet uptake remains low, especially for African Americans. Educational interventions to improve screening may target both cognitive beliefs (e.g. benefits, efficacy) and affective associations (e.g. disgust, fear). The assumption is that appropriate interventions change a person's beliefs and feelings in ways leading to behavior change. However, the patterns and time course of change in these constructs are not well understood. We examined patterns of change in cognitive and affective decision making constructs following a culturally targeted educational intervention.

Methods: Participants eligible for colonoscopy and self-identifying as African American ($n=516$) received an educational video intervention. At three time points, immediately before (pre), immediately following (post), and 6 months after the intervention (6mo), participants reported perceived benefits of and barriers to colonoscopy, positive and negative affective associations with colonoscopy, screening self-efficacy, CRC knowledge, colonoscopy fear, cancer fear, cancer worry, and screening intentions. Paired t-tests tested changes in each construct across timepoints.

Results: With the exception of cancer worry, all constructs changed in response to the intervention. However, the patterns and timecourse of changes differed across constructs. Screening intentions continued to increase and positive affective associations with colonoscopy steadily decreased. Perceived barriers decreased at post-test and curved back to baseline levels at 6 months, while perceived benefits did not change significantly from pre-test to post-test, but increased at 6 months. Fear of colonoscopy, fear of having cancer, and negative affective associations decreased initially and plateaued.

Discussion: The ability to understand how determinants change over time supports intervention development by providing appropriate timecourse information for specific constructs to make the most impact on behavior. As such, future research should investigate change in constructs over a longer timespan. These results suggest that intervention components addressing each construct may need to occur at different timepoints to make best influence behavior change for populations less likely to be CRC screening adherent.

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PSYCHOSOCIAL SUBJECTIVITY BY SPORTS MEDICINE CLINICIANS IN POST-CONCUSSION RECOMMENDATIONS

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Background: Repeated brain trauma from sport can have lasting neurologic consequences. At present, there is no clinical consensus about the number of concussions after which athletes should stop participating in contact sport. Thus, sport cessation is a preference-sensitive decision where the injured athlete must balance future health risks against current and future financial, psychological, physical, and social benefits of continued participation. Sports medicine clinicians often make clinically subjective recommendations about whether an athlete should retire post-concussion. Guided by the risk-return framework of behavioral decision theory, the present study evaluated how psychosocial factors and risk perceptions relate to clinician recommendations about sport cessation post-concussion.

Method: 677 sports medicine clinicians completed an online survey (35% response rate). Ordered logistic regression was used to assess the association between perceived risk, benefit and demographic variables with the number of concussions after which sport cessation would be recommended. Clinicians also indicated the extent to which psychosocial factors would influence their recommendations about sport cessation.

Results: On average, clinicians indicated they would discuss sport retirement after 3.2 concussions (SD=1.2). In a multivariate regression model, this number was lower when clinicians more strongly prioritized athletic achievement in their clinical decision-making ($p=0.027$), among older clinicians ($p=0.047$), and in the most athletically competitive schools ($p=0.049$). Psychosocial factors that were most likely to influence clinician recommendations about sport retirement included the coach wanting the athlete to continue football (96.6%) and the athlete being a star player on the team (90.6%).

Conclusion: There is substantial clinician subjectivity in when post-concussion sport cessation is recommended, and this study finds that clinician recommendations incorporate psychosocial considerations. This may be consistent with prioritizing the athlete's wellbeing, as athletes likely weigh a range of risks and benefits of continued sport participation. Patient-centered decision aids must be developed to help provide structure to this subjective process and to engage the injured athlete in clarifying and communicating their goals, preferences, and values. Such aids could also ensure that clinicians and athletes are working from the same set of facts about concussion.

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REAL-TIME DECISION MAKING OF WIC PARTICIPANTS AT THE GROCERY STORE: USE OF THINK ALOUD METHODOLOGY

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The foods and beverages brought into the home environment are the foods and beverages typically consumed by children at home. Due to this relationship, understanding decisions that influence parent food and beverage purchasing is important particularly among at risk populations. Environmental-level factors are often associated with grocery shopping behaviors and little work has investigated decision making processes while in the store. A qualitative study of 35 parents (30.1 ± 6.5 years; 41.9% African American; 32.3% Hispanic or Latino) with a young child (38.4 ± 11.7 months; 43.3% African American; 33.3% Hispanic or Latino) enrolled in the Special Supplemental Program for Women, Infants and Children (WIC) was undertaken; parents were audio recorded while thinking-aloud about their thoughts and decision-making while grocery shopping. Audio recordings were transcribed and independently coded using a codebook with codes determined *a priori*. Three individuals coded independently, analyzed for emerging themes and then met and reached consensus on the themes. Descriptive statistics were used to characterize parent and child demographics, food security status and food shopping behaviors. *Child's preference* emerged as a primary theme impacting a parent's decision in a food purchase. A parent's decision was also based on *value* particularly related to cost, *need* of an item for preparation or to stock the pantry, and/or the parent choice for a product based on *taste*, *perception of health or nutrition and past experience* with the product. In addition, several unique themes related to their shopping behavior including the influence of participation in WIC on food and beverage purchases, multiple trips to the store, and a frequent focus on purchasing bottled water and juice emerged. Low food security was common (46.7%), with low or very low accounting for 70%. The average duration of the shopping trip was 31.5 ± 15.7 minutes. The average total cost of goods purchased was $\$60.10 \pm \61.30 (median $\$38.61$) and was most commonly paid for through WIC and the Supplementation Nutrition Assistant Program (SNAP). Understanding the thinking processes influencing decisions in food purchases could be helpful in designing interventions to improve the home food environment.

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WHY DO SOME PEOPLE NOT KNOW THEIR RISK FOR DIABETES AND COLORECTAL CANCER?

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Background: People who say they don't know their risk for a disease have been shown to be less likely to engage in protective behavior. The purpose of this study was to identify possible pathways that lead to not knowing one's risk for common diseases. While it has been common to attribute don't know responding to satisficing or "lazy responding," we hypothesized that rather than satisficing, lower health literacy and higher health information avoidance would be associated with not knowing one's risk for colorectal cancer and diabetes due to being less informed about risk factors for the diseases.

Methods: Participants were a nationally representative sample of 1005 GfK panel members. Comparative and absolute perceived risk were assessed for diabetes and colorectal cancer; for each question, participants had the option to answer "don't know". Health literacy was assessed with the Newest Vital Sign and avoidance was assessed with Shepperd et al.'s health information avoidance questionnaire adapted to the colorectal cancer and diabetes contexts. The tendency to satisfice was assessed with a count of well-accepted indicators of lazy or inattentive responding behaviors (straightlining, missing attention checks, speeding). We compared model fit for hypothetical models including avoidance and literacy/knowledge pathways to don't know responding, with and without pathways for satisficing (MPlus). We bootstrapped estimates for indirect effects.

Results: Overall, the best fitting model contained indirect effects of health literacy and avoidance through risk factor knowledge, a direct effect of avoidance, and no effect for satisficing (all p for RMSEA >0.18 ; all CFI >0.91 , all TFI >0.81). Adding the direct effect for satisficing did not improve fit (RMSEA all $p < .001$). Indirect effects for health literacy (-0.03 to -0.06 , all $p < .02$) and avoidance (0.05 to 0.14 , all $p < .01$) through knowledge were significant. Additional direct effects for avoidance (0.19 to 0.25 , all $p < .02$) were significant for all risk outcomes, but the direct effect for literacy was only significant for diabetes comparative risk (-0.07 , $p = 0.03$).

Discussion: Satisficing was not associated with don't know responding to disease risk perception questions, but low health literacy and health information avoidance were. The latter may be related to don't know responding because they are barriers to forming a knowledge base for making risk appraisals. While don't know responders may need more health information, they do not need the 'same old health information'. Intervention might include targeting messages for low health literacy audiences and interrupting defensive processing of threatening health information with strategies shown to be effective such as self-affirmation.

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COMORBIDITY AMONG WHITE AND AFRICAN AMERICAN PATIENTS WITH TYPE 2 DIABETES

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Patients with type 2 diabetes commonly have multiple comorbid conditions that can influence and complicate self-care but little is known regarding whether African Americans (AA) and whites conceptualize these comorbidities differently. Through in-depth qualitative interviews, we assessed patients' beliefs about managing their diabetes. Experiences with comorbidities while living with diabetes were captured. Data on patient demographics, comorbidities, and A1c were derived from participants' medical records. We examined the association between number of comorbid conditions and A1c level [low ($\leq 7\%$) versus high ($>7\%$)], age, gender, race, and socioeconomic status (ability to pay for basic needs). Following a mixed methods approach, data were analyzed using ANOVA and content analysis. Comorbid conditions included cardiovascular disease, chronic obstructive pulmonary disease, mental health conditions, chronic kidney disease, pain, and cancer. Mean age (SD) was 57.33 (± 10.48) years for AA ($n=42$) and 55.63 (10.75) years for white ($n=46$) participants. There were no significant differences in number of diagnosed comorbidities based on age, ethnicity, gender, A1c status, or ability to pay for basic needs. After cardiovascular disease (90% diagnosed), pain was the most common comorbidity found via chart review (65% diagnosed). During interviews, approximately 40% of patients reported that pain interfered with their lives. Neuropathy (nerve pain) was the most common cause of pain reported and was often described as "needles and pins." Many patients also had chronic pain that interfered with daily functioning while others talked about pain causing their body to feel uncomfortable and stressed. White women recounted their experiences with pain expressively and with detail, while AA men were the least descriptive, usually mentioning that they had pain but not providing any detail about their experiences with pain. Identifying the ways in which pain is expressed across ethnicities can provide an understanding of the impact of pain on diabetes daily management. Future analyses will further explore the relationship of pain to A1c control and other factors.

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DIABETES KNOWLEDGE, FATALISM, AND PREVENTIVE HEALTH BEHAVIORS IN YOUNG ADULTS WITHOUT DIABETES

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Type 2 Diabetes (T2D) prevalence has increased among young adults. Greater T2D knowledge has been linked with preventive behavior such as diet and exercise. However, other studies suggest that knowledge and health behavior may not be related. One potential interfering factor called *fatalism*, a belief that health outcomes are outside one's control, may help clarify the relationship between health knowledge and behavior in the context of T2D prevention. Cross-sectional data were collected on 345 ethnically diverse (68.1% Latino, 13.0% Black, 7.0% Asian, 4.9% White, 1.7% Pacific Islander, 5.2% Multiracial) young adults without diabetes. Validated self-report measures were used to assess T2D knowledge, fatalism, and six T2D-related health behaviors. Results revealed that T2D knowledge, fatalism, and their interaction were not related to physical activity, sedentary behavior, sleep, or smoking. There was a significant main effect suggesting that greater fatalism was associated with lower alcohol use ($b = -.02$, $p = .02$); the main effect for T2D knowledge and the T2D knowledge X fatalism interaction were not significant. There was not a main effect for T2D knowledge on diet, but the main effect for fatalism ($b = -.08$, $p = .001$) and the T2D knowledge X fatalism interaction ($b = .00$, $p = .01$) were both significant. Inspection of simple slopes suggests that for individuals with low fatalism, greater T2D knowledge was associated with healthier diet ($b = .05$, $p = .03$), and for individuals with medium ($b = -.08$, $p = .001$) and high ($b = -.14$, $p = .001$) T2D knowledge, greater fatalism was associated with poorer diet. In sum, T2D knowledge and fatalism were not related to many health behaviors in this study. Paradoxically, greater fatalism predicted slightly lower alcohol use, but it is worth noting that alcohol use was extremely low in the sample and this small effect does not translate to clinically significant drinking behavior. Greater T2D knowledge was associated with healthier diet among individuals with low fatalism while greater fatalism was related to poorer diet among individuals with moderate or high knowledge. This suggests that T2D knowledge should be considered within the context of fatalism, as this appears to be a modifying risk factor for diet. Future research should utilize more comprehensive measures of dietary quality (e.g., food recalls) and evaluate potential predictors of fatalism such as family history of T2D or ethnicity.

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FAMILY HISTORY, ILLNESS PERCEPTIONS AND HEALTH OUTCOMES AMONG AT RISK LATINO STUDENTS

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This study is part of a larger NIH funded investigation that seeks to examine the influence of family illness-history on beliefs, regarding disease-threat and health-related outcomes among Latino college students who are at risk for future diabetes acquisition due to genetic predisposition. The sample included 156 Latino college students (44% male; 66% female) ages 18 to 60. Based on the NIH Diabetes Risk Test, 30.7% of the sample was classified to be at low-risk for diabetes, 44% at moderate-risk, and 25.3% at high-risk. The mean BMI score for the total sample was 26.7 (considered overweight) with 57.7% of participants classified as being overweight and/or obese and 38.5% at a healthy weight. Participants completed a comprehensive survey that assessed constructs identified in the Health Belief Model and Common Sense Illness Model of disease. The results presented center on the relationship between family history of diabetes (degree of genetic risk and illness severity of afflicted relative) on perceptions of disease threat to self if acquired, self-rated risk for disease acquisition in the future, and perceived seriousness of the disease on participants' self-rated perception of health, health importance and actual health as indicated by BMI indices and Diabetes Risk scores. The findings of the path analysis using linear regression revealed an indirect positive effect between a family member's illness severity to self-rated threat for future disease acquisition which in turn impacted participants' perception of their health status negatively. Interestingly, illness severity of the afflicted relative also had an indirect effect on how threatening the disease would be to self if acquired which in turn positively impacted their overall view on health importance. Family genetic risk (1st, 2nd or 3rd degree relative afflicted) had a positive indirect effect on health outcomes such as having a higher BMI and diabetes risk score when mediated by perceived risk. However, a negative indirect effect was seen when it came to their health perception and its mediation by the aforementioned variable. The results suggest that the influence of family illness-history on objective and psychological health-outcomes are mediated by disease-threat indicators and will be discussed within the context of the HBM and CSIM of disease.

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LINKS OF COMMUNAL COPING TO RELATIONSHIPS AND HEALTH: A LATENT VARIABLE APPROACH

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Communal coping was originally defined by Lyons and colleagues (1997) as the perception of a problem as shared (i.e. “our problem” as opposed to “my” or “your” problem) and collaborative action to address the problem. However, there is currently no consensus as to how best to measure communal coping. Therefore, we explored 5 distinct measures of communal coping in a study of 123 couples in which one person was recently diagnosed with type 2 diabetes (age of 54 years. Communal coping was measured through 1) a series of self-report questions 2) the proportion of first person plural pronouns (“we”) used during a brief coping interview, 3) behaviors coded from a videotaped discussion of a diabetes problem 4) a diabetes-adapted measure of the Inclusion of Other in Self scale (Aron, 1992) which consists of pairs of circles signifying the self and other with varying degrees of overlap, and 5) an aggregate measure of self-report questions that were tracked over 14 consecutive days during a daily diary assessment. Our first goal was to determine if we could create latent variables to reflect the shared appraisal and collaborative components of communal coping from these measures. Our second goal was to determine if the two components of communal coping were related to better self-care, lower psychological distress, and higher relationship satisfaction. A confirmatory factor analysis revealed that two latent variables, one reflecting shared appraisal and one reflecting collaboration, fit the data well ($\chi^2_{(11)} = 9.24, p = .60$; RMSEA = .00; CFI = 1.00; TLI = 1.02; SRMR = .04). One structural equation model (SEM) showed that the shared appraisal was related to lower psychological distress ($\beta = -.26, p = .06$), higher relationship satisfaction ($\beta = .38, p < .001$), and better self-care behavior ($\beta = .34, p < .01$) ($\chi^2_{(16)} = 27.88, p = .03$; RMSEA = .08; CFI = .94; TLI = .90; SRMR = .06). A second structural model showed that collaboration was linked to lower psychological distress ($\beta = -.27, p = .02$), higher relationship satisfaction ($\beta = .59, p < .001$), and better self-care behavior ($\beta = .40, p < .001$) ($\chi^2_{(10)} = 20.98, p = .02$; RMSEA = .09; CFI = .95; TLI = .90; SRMR = .04). SEM enabled us to identify two distinct aspects of communal coping, each of which was related to positive relationship, psychological, and behavioral outcomes in the case of chronic illness.

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MBSR VERSUS CBT FOR STRESS REDUCTION IN OLDER ADOLESCENTS AND YOUNG ADULTS WITH POORLY CONTROLLED TYPE 1 DIABETES

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Background: Psychological stress is linked with impaired diabetes management and glycemic control in persons with type 1 Diabetes (T1D). Cognitive-behavioral interventions (CBT) have been shown to reduce self-reported stress, but do not serve as an effective means for improving diabetes management (DM) and/or glycemic control in adolescents and adults with T1D. Despite the large body of data suggesting the importance of improving skills to cope with stress, those stress management interventions developed to date have been ineffective in improving important health outcomes for adolescents and adults with T1D. Mindfulness-Based Stress Reduction (MBSR) is an intervention shown to reduce stress-related symptoms in various patient populations, but its efficacy in older adolescents and young adults (OAYA) with T1D has not been previously evaluated.

Objective: To examine the effect of two stress management interventions (CBT and MBSR) and a diabetes support and education control group (DSE) on stress, diabetes management, and glycemic control, among an urban sample of OAYA.

Methods: Forty-eight (48) OAYA with type 1 diabetes and poor metabolic control were randomly assigned to one of the three intervention groups. A pre-post design was used to evaluate treatment outcomes after treatment.

Results: OAYA receiving DSE showed marginally significant improvement in self-reported stress ($t(15) = -1.48, p = .08$) and significant improvement in glycemic control ($t(15) = -2.49, p = .0125$). OAYA receiving MBSR showed a significant improvement on self-reported stress only ($t(15) = -1.96, p = .0345$). All outcomes for CBT were not significant.

Conclusion: While MBSR effectively reduced stress, diabetes support and education improved both stress and diabetes-specific outcomes. OAYA with T1D may benefit from opportunities for group social support specific to their medical condition.

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SEX AND RACE DIFFERENCES IN THE RELATIONSHIPS AND HEALTH OF ADULTS WITH TYPE 2 DIABETES

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The positive impact of close relationships on the physical health of people with chronic diseases, including Type 2 diabetes, has been well-established. In particular, relationship quality has been associated with better diabetes self-management and less diabetes distress. Sex differences have been observed such that marital quality results in more health benefits for men than for women. However, few studies have examined racial differences in the association between relationship quality and health. In the current study, we examined 1) race and sex differences in relationship and health outcomes among persons with Type 2 diabetes, and 2) whether race and sex moderate the association between relationship quality and health outcomes. Participants were in a committed relationship and were recently diagnosed with Type 2 diabetes ($n=200$; average age 53; 54% White, 47% African American; 55% male, 45% female). Males experienced marginally better relationship quality than females, and White participants experienced marginally better relationship quality than African American participants (all p 's $< .10$). African-American participants reported higher psychological distress, worse diabetes self-care, and worse medication adherence than White participants (all p 's $< .01$). Males reported receiving more emotional support ($p < .05$) and more instrumental support ($p < .001$) as well as experiencing more overprotectiveness ($p < .01$) and more unsupportive interactions ($p < .007$) from their partners. Interestingly, there were no race differences in support received from partners, but African-American participants reported experiencing more negative social interactions than White patients (avoidance, $p < .001$; unsupportive interactions, $p < .01$) from their partners. Relationship quality was related to greater medication adherence, but this effect was moderated by both sex and race ($p < .001$). The strongest relation was observed for African-American females: those with low relationship quality had the lowest medication adherence, and those with high relationship quality had the highest medication adherence of all groups. Similar trends were noted for general distress and diabetes self-care. These results indicate that there are sex and race differences in the challenges people with diabetes encounter as well as the types of partner involvement they experience. Relationships appear to be an important resource for people with diabetes, especially for African-American women.

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A DIABETES SELF MANAGEMENT E-HEALTH INTERVENTION: PERCEPTIONS AND RATINGS OF ADULTS WITH TYPE 2 DIABETES MELLITUS

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The Centers for Disease Control and Prevention (CDC) statistics for 2017 indicated that over 30 million people have been diagnosed with type 2 diabetes mellitus (T2DM) in the United States. The populations most affected by T2DM are groups of low socioeconomic status and who represent group of ethnic minority populations. Healthy People 2020 has set as a national objective the goal of increasing the proportion of persons who receive formal diabetes education. This disparity between diabetes self-management providers and type 2 diabetes mellitus prevalence complicates achieving that goal, particularly among the populations of low socioeconomic status and minority ethnic groups. In order to address this challenge and work towards reaching the national objective of increasing access to diabetes self-management education (DSME), this study evaluated adults with T2DM perceptions of a culturally-appropriate, avatar-based e-health-intervention that delivered diabetes self-management education (DSME). This study investigated the potential the e-health intervention, grounded in health behavior theories, had in facilitating adoption of the seven self-care behaviors associated with successful management of type 2 diabetes, known as the AADE7 (healthy eating, being active, monitoring, taking medications, problem solving, reducing risks and healthy coping). Additionally, participants' stage of change and self-efficacy were measured pre and post viewing of the avatar video.

METHODS: Cross-sectional, survey-based design utilizing quantitative and qualitative paradigms. A logic-model framed the study which centered on the broad and general concepts leading to study outcomes of a positive perception of the e-health intervention and increases in participants' stage of change and self-efficacy. $N = 46$ participated in the evaluation. Participants were mostly female and represented an age range of 21–70 years. The majority of the participants were employed full-time.

ANALYSIS: The data were analyzed using independent and paired t -tests, Pearson product moment correlation and content/thematic analysis.

RESULTS: The data revealed statistically significant increases in the participants' stage of change and self-efficacy. The qualitative data revealed that the participants' overall impression of the e-health intervention was positive.

CONCLUSIONS: An e-health intervention grounded in evidenced-based health behavior theories has potential to increase access to DSME as well as facilitate behavior change as is evidenced in the increases in the participants' stage of change, self-efficacy and perceptions of the video.

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ACCEPTABILITY OF A PHYSICAL ACTIVITY AND SELF-MANAGEMENT SUPPORT PROGRAM FOR ADOLESCENTS WITH TYPE 1 DIABETES AND THEIR PARENTS

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Adolescents with type 1 diabetes (T1D) and their parents sometimes struggle with the time-consuming and complex behaviors that are needed to manage T1D and maintain a healthy lifestyle. Few interventions have addressed the problem of physical activity (PA) promotion for this population. The purpose of this qualitative analysis was to evaluate the feedback from participants following a pilot 12-week peer group intervention for sedentary overweight adolescents with T1D and their parents in which we combined a PA component modeled after *Bright Bodies*, a weight management program, and a self-management support component modeled after the program *Teens-Connect*.

Telephone interviews (mean 27 ± 8 min) were conducted post-intervention with 16 adolescents (age 14.2 ± 2.4yr, 69% female, 63% African-American/Latino) and their parents (42.4 ± 6.8yr, 88% female). Two authors reviewed a subset of the transcribed interviews (6) using Atlas.ti 7 and identified emerging patterns guided by Thorne's Interpretive Description approach and based on Sekhon's theoretical framework of acceptability as a multidimensional construct.

One pattern identified was the expressed desire on the part of several parent-child dyads to connect with others living with T1D and the feeling of community they experienced in the program. For several, this was their first opportunity to interact with peers with T1D. For adolescents, the two most popular aspects of the program were the non-competitive games and the group discussions and role-playing. Some parents cited travel time to the program as burdensome. Many spoke about how much they value messages focused on good health through PA and other lifestyle behaviors and their appreciation for that emphasis in the program. Parents gave up the time they typically spent doing housework to participate, while adolescents reported missing birthday parties and sacrificing sleeping time. Parents reported that the adolescents had increased interest in participating in PA after the program. Others reported that through participating in the program their adolescents changed their perception about using an insulin pump and that they had either started using one or were going to discuss it at their next appointment.

As analysis of the remaining transcripts continues, we aim to confirm and describe these preliminary patterns more richly. Key patterns contributing to acceptability were the peer group approach, non-competitive games, and demonstration of self-efficacy for healthy behaviors. Key barriers were logistical (travel, time) suggesting a more pragmatic delivery approach is needed. Compared with previous programs for sedentary adolescents with T1D using a more individual approach, these preliminary results suggest that our peer group approach to PA promotion for this population holds promise and warrants further investigation.

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ACHIEVING RECRUITMENT GOALS IN A PRIMARY PREVENTION STUDY OF ADULTS WITH DIABETES: THE PATRIOT RANDOMIZED CLINICAL TRIAL (RCT)

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Objectives: Diabetic neuropathy is the antecedent to diabetic foot ulcer (DFU), a major risk factor for lower extremity amputations. We report on the success in enrolling participants with diabetic neuropathy in the PATRIOT RCT, which tests a personalized intervention to lower the risks of developing DFU.

Methods: In order to prevent DFU, the VA instituted screening for foot risk using the PAVE (Prevention of Amputation for Veterans Everywhere) score. We identified Veterans at risk for a DFU by searching electronic medical records for the ICD-10 codes associated with increased risk, i.e. PAVE scores 1,2 or 3. Veterans at risk of developing a DFU were sent an invitation letter about the program. Veterans who did not opt out were then approached by a team member who obtained informed consent and then screened the patient for eligibility. After enrollment, participants had a 1-month run-in period before coming in for the baseline visit and being randomized. A modest \$40 was provided for time and travel. Participants were kept engaged through ongoing phone and mail contact before and after enrollment.

Results: From August 2015 to September 2017, we identified 1,817 patients from electronic search and medical record review. Of the 1,817 PATRIOT patients, 808 (44.5%) were not eligible for the trial because they did not meet eligibility criteria. Of the 1,009 patients who were eligible for the program, 184 (18.24%) are currently enrolled in the study and 109 (10.80%) have completed the 12-month trial (total enrolled = 293). Of the eligible participants, 287 (28.44%) were not interested after being contacted about the program and 106 (10.5%) were interested in joining the study, but had not yet been enrolled. Various reasons lead participants to cancel their enrollment in the program (n=36, 3.57%) during the run-in, or drop out of the program (n=8, 0.79%) following randomization. Furthermore, from the pool of 1,009 patients, there are 254 (13.98%) patients who have not yet been approached for the study and new eligible patients are being identified in an ongoing basis.

Conclusion: A major challenge to RCT execution is recruitment. Recruitment for the PATRIOT RCT is on pace to reach the goal of 404 subjects. If recruitment lags, we have a list of interested eligible Veterans (n=106), Veterans who have not been approached yet (n=254) as well as a stream of ongoing newly identified eligible Veterans. This provides reassurance that the recruitment goals will be met.

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BRIGHT 1 BODIES: EXTENDING THE BRIGHT BODIES FAMILY-BASED INTENSIVE LIFESTYLES THERAPY TO ADOLESCENTS WITH TYPE 1 DIABETES

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Background: Over two-thirds of adolescents with type 1 diabetes (T1D) are sedentary. The Bright 1 Bodies Intensive Lifestyles Program aimed to promote their physical activity (PA) by group exercise classes from the Bright Bodies Weight Management Program, combined with T1D self-management education, coping skills discussions, and parent classes. This pilot study aimed to: 1) evaluate intervention feasibility and acceptability; and 2) examine changes in PA, nutrition, BMI, and T1D self-management behaviors.

Methods: Bright 1 Bodies offered 12 sessions per week to sedentary adolescents with T1D (n=18; age 13.7 ± 2.3yrs; 67% female; 67% African-American/Latino; A1c 9.5 ± 2.3%; BMI 88 ± 12%ile). At baseline and 12wk we assessed: a) feasibility by % enrolled of eligible candidates approached and # of sessions attended; b) acceptability by a 28-item exit survey graded on a 5-point Likert scale; c) PA apart from intervention sessions by number and duration of moderate to vigorous bouts (≥10min, ≥3 METs) registered by a hip accelerometer over 7 days' wear; d) nutrition by # of fruit and vegetable servings (80g) recorded on 3-day food logs; e) glycemic control by HbA1c, mean glucose, glycemic profiles (% readings <70, 70–180, and >180 mg·dL⁻¹), and insulin daily dose; and f) self-management variables by # of weekly glucose tests, the Hypoglycemia Fear Survey Worry Subscale (HFS-W), diabetes Self-Care Inventory (SCI), and Quality of Life Diabetes Module (QOL-D). Repeated measures ANCOVA (covariates gender & age, significance p<0.05) and Becker's effect size (d≥0.20 small, ≥0.50 moderate, ≥0.80 large) analyzed the data.

Results: Among the 105 eligible candidates approached, n=18 enrolled (16%) and attended median 8 of 12 sessions (range 3–12) while 78% of parents (n=14) attended median 6 sessions (range 1–10). Acceptability scores on all subscales were high (program components/strategies X±SD 4.5 ± 0.4, participant comfort 4.3 ± 0.5, instructor-related factors 4.3 ± 0.6). At both baseline and 12wk, PA (2.6 ± 3.4vs4.3 ± 7.1 * 10-min bouts/week, p=0.52, d=0.22) was low, screen time high (3.6 ± 2.8vs4.1 ± 2.9hrs/day, d<0.20), BMI overweight (24.8 ± 3.1vs24.9 ± 3.3kg·m⁻², p=0.35, d<0.20), and glycemic control poor (A1c 9.5 ± 2.3vs9.4 ± 2.1%, p=0.72, d<0.20). Self-management behaviors were also unchanged (p>0.05, d<0.20).

Conclusion: The intervention was feasible and acceptable but did not improve poor PA and nutrition among sedentary adolescents with T1D, suggesting this at-risk population needs more intensive interventions.

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CITATION AWARD WINNER

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DEPRESSIVE SYMPTOMS ASSOCIATED WITH COPING AND SELF-CARE IN TEENS WITH POORLY CONTROLLED TYPE 1 DIABETES

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Background: Type 1 diabetes (T1D) is one of the most common chronic conditions affecting teens. T1D requires a rigorous treatment regimen, and teens experience high levels of diabetes-related stress. Previous studies have shown that teens with T1D exhibit increased rates of depression. However, the relationship between depressive symptoms, coping strategies, and self-care in adolescents with poor glycemic control has not been previously investigated.

Methods: Teens with T1D (n=120, age 13–17, 52.5% female, 86.8% White non-Hispanic, mean A1c=9.2%) and their caregivers completed the Self Care Inventory (SCI), a measure of diabetes management behaviors. Teens also completed the Patient Health Questionnaire (PHQ9), a measure of depressive symptoms, and the Responses to Stress Questionnaire (RSQ), which assesses coping strategies and involuntary stress responses (e.g., intrusive thoughts, physiological arousal). Clinical data (i.e., A1c) were collected from medical charts.

Results: 60% of teens in this sample reported minimal depressive symptoms, 30% reported mild symptoms, and 8.6% reported moderate/severe symptoms. There were no significant differences in depressive symptoms between genders or between those using insulin pumps vs. injections. Age was significantly associated with increased depressive symptoms (r=.28, p=.002); however, disease duration and A1c were not. Comparisons between those scoring 0–4 on the PHQ9 (little or no depression) and those scoring 5 or higher (at least mild depression) revealed differences on several measures. Parents of depressed teens reported significantly worse self-care than parents of non-depressed teens (t(118)=2.20, p=.03). Likewise, depressed teens also reported worse self-care (t(118)=3.87, p<.001). Responses to stress also differed. Depressed teens reported lower levels of primary control coping strategies, such as problem solving, than non-depressed teens (t(118)=2.36, p=.02), as well as less frequent use of secondary control coping strategies, such as acceptance and distraction (t(118)=3.62, p<.001). Additionally, depressed teens reported higher levels of stress reactivity (t(118)=3.40, p=.001).

Discussion: In our sample with of teens with poor glycemic control, we found more than twice as many teens reporting mild depression as described in a nationally representative sample of teens with T1D (in which 14% reported mild symptoms). Further, teens reporting clinically significant depressive symptoms exhibited worse self-care (as reported by both teens and parents), and also indicated less frequent use of primary and secondary control coping strategies and higher levels of stress reactivity. Greater use of adaptive coping strategies may be targeted in future interventions as a way to prevent depression and promote adherence in this high-risk population.

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DIABETES COMMUNITY PARTNERS: A CASE STUDY OF A DIABETES COMMUNITY COALITION IN RURAL APPALACHIAN OHIO

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In the Appalachian region of rural southeastern Ohio, diabetes rates are more than double the national average (19.9% versus 9.3%). Here, diabetes patients are more likely to have microvascular complications, limited access to health care, lower health literacy, food insecurity, and depression. To address rising rates of diabetes in the region, we formed the Diabetes Consumer Coalition to mobilize community members with diabetes along with key healthcare personnel to make southeastern Ohio more diabetes friendly. On average, six community members and two group leaders attend the monthly coalition meetings. Coalition members put forth a new group name, Diabetes Community Partners (DCP), articulated a clear vision and mission statement, and selected peer-to-peer diabetes mentoring as their programmatic initiative for rural southeastern Ohio. Five of the six coalition members also completed six two-hour training sessions in peer-to-peer diabetes mentoring. To assess members' experiences with DCP, we conducted a qualitative process evaluation. Process evaluations allow researchers to gain insight into the best practices of a program. All eight coalition members (mean age=62.0 ± 16.2 years, 75% female, 87.5% white, 85.7% type 2 diabetes, 21.6 ± 17.5 diabetes duration) participated in in-depth individual interviews. Three themes emerged from the analysis: 1) A Helping Spirit: When asked why they became involved in DCP, leaders and members explained that they saw themselves as helpers, supporters, and peers to individuals living with diabetes in the community. Participants agreed that DCP was necessary to give support to diabetes patients who might not have support at home. 2) The Value of Emotional Support: Participants readily acknowledged the importance of emotional support and talking to others about how diabetes makes you feel. For many of these participants, DCP gave them hope because they were helping others and helping themselves at the same time. 3) The Power of Mentorship: Leaders and members enjoyed learning more about diabetes while supporting each other through the six-week program. Participants recognized that if an individual was receptive, mentorship could be very powerful. Importantly, they also noted the significance of being non-judgmental when mentoring and being honest with mentees that they did not have all the answers. Next steps will focus on the development of strategic plans for sustainability of the coalition.

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DO VETERANS WITH A PREVIOUS DIABETIC FOOT ULCER HAVE LOWER HEALTH STATUS COMPARED TO DIABETIC VETERANS WITHOUT A PREVIOUS ULCER?

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Objective: A diabetic foot ulcer (DFU) is a serious complication of diabetes mellitus with more than 90% of non-traumatic lower extremity amputations being preceded by a DFU. Previous studies have described impaired health-related quality of life in patients with previous DFU. This study aims to compare the cognitive, emotional, and physical health states between diabetic veterans with neuropathy (without a previous DFU) and those with a history of a DFU.

Methods: A cross-sectional study was designed with diabetic veterans with history of DFU and diabetic veterans with neuropathy but without DFU. All veterans completed the Mini Mental State Exam (MMSE), Personal Health Questionnaire Depression Scale (PHQ-8), Euro-Qol-5D (EQ-5D), and Foot and Ankle Ability Measure (FAAM) questionnaires. MMSE scores served as measurements of cognitive impairment between the two groups. Data regarding the emotional and physical health state of patients were obtained from PHQ-8 scores and from the VR-12, EQ-5D, and FAAM assessments.

Results: Our analysis included 102 diabetic veterans with previous DFU and 274 diabetic veterans with neuropathy but without DFU. Patients with and without history of DFU had an average age of 67.92 years and 69.06 years, respectively ($p = .14$). Both groups were overwhelmingly male (>98%) and had similar racial demographics with a large proportion of African Americans. Veterans with history of DFU demonstrated higher MMSE scores than those without (27.66 vs. 27.02, $p = .04$). Furthermore, veterans with history of DFU averaged similar general health scores on the EQ-5D compared to those without (70.32 vs 68.13, $p = .23$). Patients with a history of DFU reported similar scores on the PHQ-8 (7.05 vs. 6.11, $p = .24$) and on the FAAM scale (66.33 vs 67.27, $p = .82$) than those without a previous DFU.

Conclusions: Although Veterans with a history of DFU performed better on the MMSE than those without history of DFU, the small difference may not have clinical significance. No other statistically significant differences were observed between these two groups suggesting that these two subgroups are similar to one another. While both groups had similar health status, it is important to note that their health status is quite low. Comprehensive efforts should continue to be made to focus on such complex diabetes patients to optimize their care and to retard further deterioration in health.

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FEASIBILITY OF USING A FITBIT-BASED INTERVENTION FOR INCREASING PHYSICAL ACTIVITY IN PATIENTS AT RISK FOR A DIABETIC FOOT ULCER

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In one year, US adults with diabetic foot ulcers (DFUs) incur \$9–13 billion in healthcare costs, in excess of the costs associated with treating diabetes itself. Since 25% of adults with diabetes will develop a DFU, prevention of DFUs is critical to curbing amputations and decreasing costs. Regular physical activity may prevent DFUs, if increased gradually. While supervised physical activity programs increased physical activity in adults at risk for DFUs, these programs are unlikely to be disseminated widely since physical activity sessions are rarely covered by insurance and can be burdensome. In this mixed-methods study, we examined the feasibility of a low intensity, Fitbit-based behavioral intervention to increase physical activity in adults at risk for a DFU. Participants at risk for a DFU ($n=12$, 66% female, $M_{age}=59.9$ years) received 4 in-person physical activity and behavioral counseling sessions over 2 weeks, supplemented with the use of a Fitbit (to track steps) and text messages (to reinforce behavioral strategies) for an added 8 weeks. Gradual increases in activity goals, as little as 50 steps/day, were used to increase activity without increasing DFU risk. Pre- and post-intervention assessments of accelerometer measured activity (PAMsys) and glycemic control (A1c) were completed by all but one participant. Treatment acceptability was assessed by questionnaire and via key informant interview at the post-intervention assessment. Results suggest that the program was feasible such that all but 1 participant attended all 4 sessions, all used the Fitbit and all responded to text messages. One participant developed a DFU, which resolved, and she returned to being physically active. Treatment acceptability (scale: 1=very dissatisfied, 5=extremely satisfied) was high; average item ratings ranged from $M=4.2$ ($SD=1.14$) for satisfaction with the length and location of sessions, to $M=5.0$ ($SD=0$) for satisfaction with the session safety precautions, provision of interesting information and discussions of monitoring physical activity. Participants increased their steps by an average of 761 steps/day ($d=0.55$) and A1c decreased on average by 0.32% ($d=0.23$). Interview results suggest that participants found the sessions, Fitbit and text messaging useful. Individuals at risk for a DFU might benefit from a low-cost, less intensive intervention to increase their physical activity, with little risk. Future research comparing the intervention to usual care is warranted.

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LINKS OF DISPOSITIONAL PLAYFULNESS IN ADULTS WITH TYPE 1 DIABETES AND THEIR PARTNERS TO WELL-BEING

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Chronic illness research has traditionally focused on stressful contexts of the illness and their impact on health and well-being, while overlooking the role of positive characteristics and contexts. One positive dispositional characteristic that is likely to affect well-being and self-care is playfulness, defined as a tendency to pursue activities with the goal of amusement or fun, and with an enthusiastic and in-the-moment attitude. Playfulness is likely to generate positive affect, reduce stress, improve problem-solving (by taking a positive approach to handling illness-related problems), and bring partners closer together. We hypothesized that playfulness would be linked to greater life satisfaction, less stress, less depression, greater perceived problem resolution during a diabetes stressor discussion, and greater relationship quality in individuals with type 1 diabetes and their spouses ($n = 199$ couples, 52% female, M age = 47 years). We also expected that playfulness would be linked to better self-efficacy, less diabetes stress and better self-care, due to improvements in diabetes problem-solving and mood. Findings indicated patient playfulness was linked to greater life satisfaction, less stress, less depression, greater perceived problem resolution and better mood during the discussion, and marginally less diabetes distress, but no other diabetes outcomes (significant p 's < .05, marginal p 's < .10). When controlling for extraversion and agreeableness, links from playfulness to perceived problem resolution and better mood during the discussion remained and the link to depression became marginal, but playfulness was also linked to worse self-efficacy and marginally worse self-care. For spouses, playfulness was linked to less depression, higher relationship quality, greater perceived problem resolution and better mood during the discussion. When controlling for personality constructs, the link to perceived problem resolution became marginal, all other links remained significant. Findings suggest that playful individuals have positive views of how they handle diabetes care, but these perceptions may not translate into self-care behavior. Implications will be discussed.

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CITATION AND MERITORIOUS AWARD WINNER

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NOCTURNAL CAREGIVING OF ADOLESCENTS WITH TYPE 1 DIABETES: INTERVIEWS WITH CAREGIVERS ON SLEEP AND DIABETES MANAGEMENT

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Nocturnal caregiving has been identified as a barrier to sleep and a source of parenting stress in caregivers of younger children with type 1 diabetes (T1D), but it has not been explored in parents of teens with type 1 diabetes. We conducted semi-structured interviews with 25 caregivers (92% parents; 88% female) of teens with T1D (mean age = 15.6 years; 52% female; mean HbA1c = 8.9%; 56% using insulin pumps, 20% using continuous glucose monitors (CGMs)) exploring caregivers' role in diabetes management at night and its effect on teens' and caregivers' sleep. Interviews were transcribed, and each interview was coded by two raters in Atlas.ti. Inter-rater reliability was 82%, and consensus was reached for any remaining coding discrepancies. Nocturnal caregiving behaviors were reported by 60% (n=15) of caregivers, of which 40% (n=6) reported that they regularly check their child's blood sugar at least once during the night. Caregivers described feelings of anxiety related to their child's diabetes management, reporting a heightened sense of worry and increased overnight monitoring when their child has low blood sugar before bed, is sick, or after a change to their teen's insulin regimen (in these situations, medical providers generally recommend overnight checks). In these instances, caregivers postponed their own bedtime or set personal alarms in order to monitor their child's blood sugar. Others were woken and alerted to diabetes-related concerns by their teen or their teen's CGM. Notably, of the 5 caregivers whose teen used CGM, 3 reported that they still checked their teen's blood glucose at night. Caregivers reported the effects of T1D on their teens' sleep as well as their own, describing difficulty falling asleep, interrupted sleep, and feeling tired and cranky the following day. Findings from these interviews suggest that nocturnal caregiving is common among caregivers of teens with T1D, even when it may not be medically necessary, and these behaviors may have a negative impact on both teens' and caregivers' sleep and wellbeing. Results will inform interventions to improve sleep in teens with T1D and reduce caregivers' distress.

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PARTNER PERCEPTION OF DIABETES AS SHARED BENEFITS PA- TIENTS WITH LOW SELF-EFFICACY

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Traditionally coping has been viewed as an individual process, but it has increasingly been recognized that patients' disease adjustment may be influenced by their social network. One type of interpersonal coping is communal coping, which is defined by Lyons and colleagues (1998) as the appraisal of a problem as "our problem" (compared to "my problem"), and subsequent collaboration to solve it. Past research has indicated that shared illness appraisals are particularly beneficial to patients, especially when those appraisals are held by partners. We studied illness appraisals among couples in which one partner was diagnosed with type 1 diabetes (N = 199; patients 91% white, 52% female, average age 47[range 26–75]; partners 94% white, 47% female, average age 46[range 24–77]). We examined whether shared illness appraisals were especially beneficial when patients felt less confident about their abilities to take care of their diabetes. We assessed illness appraisal by asking patients and partners whether they viewed diabetes as the patient's issue, the patient's issue with effects on the partner, or a shared issue. The interaction between patient shared illness appraisal and patient self-efficacy was not significant in predicting any outcomes. However, multiple regression analyses showed that partner appraisal interacted with patient self-efficacy to predict depressive symptoms ($p < .05$), life satisfaction ($p < .001$), stress ($p < .01$), self-care behaviors ($p < .05$), diabetes distress ($p < .10$), mental functioning ($p < .10$), and sleep quality ($p < .10$). In all cases, partner report of the problem as shared was associated with better patient outcomes when patients reported low diabetes self-efficacy. By contrast, when patients reported high diabetes self-efficacy, partner appraisal of the problem as shared was unrelated or related to slightly worse outcomes. These findings indicate that partner appraisal of diabetes as shared is particularly adaptive for patients when they feel less capable of managing the illness.

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PHYSICAL ACTIVITY AND PRO-HEALTH BEHAVIOR PROFILES IN DIABETES RISK AMONG BLACKS AND WHITES: A NOVEL MA- CHINE LEARNING ANALYSIS

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The goal of the current study is to assess the prevalence of diabetes across four physical activity profiles/phenotypes (sedentary, moderate, active and very active) and infer through machine learning which combinations of physical activity, sleep, stress and body mass index yield the lowest prevalence of diabetes in Blacks and Whites. Data were extracted from the National Health Interview Survey (NHIS) dataset from 2004–2013 containing demographics, chronic diseases, and sleep duration (N=288,888). Of the total sample, 9.34% reported diabetes (where the prevalence of diabetes in Blacks/African Americans being 12.92% and 8.68% in Whites). Over half of the sample reported sedentary lifestyles (Blacks were more sedentary than Whites); approximately 20% reported moderately active lifestyles (Whites more than Blacks); approximately 15% reported active lifestyles (Whites more than Blacks), and approximately 6% reported very active lifestyles (Whites more than Blacks). Across four different physical activity lifestyles, Blacks consistently had a higher diabetes prevalence compared to their White counterparts. Physical activity combined with healthy sleep, low stress, and average body weight reduced the prevalence of diabetes, especially in Blacks. Our study highlights the need to provide alternative and personalized behavioral/lifestyle recommendations to one-size-fits-all national physical activity recommendations, specifically among Blacks, to reduce diabetes and narrow diabetes disparities between Blacks and Whites. Therefore, we highly recommend diabetes counselling take a personalized and "bundled approach" where a variety of pro-health behaviors are recommended but personalized to the individual's profile. Moving forward, ubiquitous sensing wearables may be a solution to more accurately assess multiple behaviors without unduly burdening individuals with self-tracking.

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REVISITING THE FACTOR STRUCTURE OF THE CES-DC FOR DEPRESSIVE SYMPTOMS IN CHILDREN AND ADOLESCENTS WITH TYPE 1 DIABETES

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Introduction: Up to 30% of youth with type 1 diabetes (T1D) will develop depressive symptoms, which are linked to impaired T1D management (Buchberger et al., 2016). Cost-effective, reliable screeners are needed to assess these youth to facilitate early treatment. The Centers for Epidemiological Studies - Depression Scale for children (CES-DC) is a measure that is free, easy to use, reliable, and valid (Weissman et al., 1980; Stockings et al., 2014; Roy et al., 2011; Fountoulakis et al., 2007). However, the CES-DC has been criticized for its biased items and inconsistent factor structures (Carleton et al., 2013). Here, we test the stability of empirically derived factor structures of the CES-DC in youth with T1D, to measure its acceptability as a screening measure.

Methods: 499 youth (Mean age = 15.5 ± 2.1 years; Mean time since diagnosis = 6.1 ± 3.9 years; 49.9% male; 82.9% white) completed the CES-DC during a routine clinic visit. We also collected hemoglobin A1c (A1c) and demographic information at the visit. We tested the 3- and 4-factor structures with the most empirical support (Radloff, 1977; Carleton et al., 2013) using maximum likelihood estimation in Mplus. We tested the stability of the factor structure across age groups (≤ 14 years or ≥ 15 years) after controlling for A1c using weighted least squares means and variance adjusted for categorical measurement invariance.

Results: In this sample, only 18.2% of youth had good glycemic control (A1c ≤ 7.5%), while 43.8% had poor control (A1c ≥ 9.0%). On the CES-DC, 27.1% of youth scored ≥ 15, indicating a concerning level of depressive symptoms. Our factor analysis confirmed better model fit for the 3-factor versus the 4-factor model, providing support to remove six potentially biased items. Remaining items assessed negative affect, anhedonia, and somatic symptoms. Controlling for A1c, the 3-factor structure showed configural and weak invariance across age groups.

Conclusion: Our results support using the 3-factor structure to interpret the CES-DC in youth with T1D. Stability across age groups and glycemic control suggests the CES-DC provides a reliable measure of depressive symptoms. However, additional research is needed to determine whether depression ratings on the CES-DC are impacted by cognitive or somatic symptoms of diabetes (Stewart et al., 2011; Shemesh et al., 2005; Ohayon & Schatzberg, 2003).

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STEREOTYPES AND BARRIERS: THE ROLE OF THE STEREOTYPE CONTENT MODEL AND DIABETES DISTRESS IN BLIND ADULTS WITH DIABETES

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The current project examined the perspectives of blind adults with diabetes through the theoretical framework of the Stereotype Content Model impacting Diabetes Distress. Comorbidities, experiencing two or more chronic conditions concurrently, are linked to poor health outcomes, and difficulty managing self-care. The experiences of persons living concurrently with blindness and diabetes are understudied. According to the Stereotype Content Model, healthcare providers (HCPs) may view minority patients, such as blind adults, with pity or contempt and, as a result, the quality of their interactions with their blind patients may be diminished. Minority patients perceive this pity or contempt and, as a result, may become disheartened, distressed, and mistrustful of medical authorities. Diabetes Distress is diabetes-related emotional hardship and Diabetes Burnout is apathy and depression symptoms that affect diabetes self-management. These stereotypes may lead some HCPs to patronize patients, over-emphasize impairments, and construct barriers, be it incidental or otherwise, for blind patients with diabetes. As a result of these barriers, individuals in this population may feel a heightened level of distress. We predicted that this distress would be evident in the qualitative responses of this sample. Eleven blind adults with diabetes participated in focus group interviews. Thematic analyses revealed that participants perceived being regarded as incompetent by many of their HCPs. In addition to this, participants often reported feeling as if their HCP could not communicate with them. Participants discussed unique barriers they faced such as inaccessible medical equipment and problematic hospital policies. Participants reported that such experiences often led to distress and mistrust in healthcare advice from HCPs, although they did not mention instances when this distress affected their disease management. Conversely, participants reported feeling respected by some HCPs and, as a result, they felt content with healthcare and trusted healthcare information. These results shed light on the role of stereotypes in shaping the healthcare experience of patients who live the unique experience of blindness and diabetes.

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THE DETRIMENTAL ASSOCIATION BETWEEN STRESS AND DIABETES MANAGEMENT IN A SAMPLE OF HIGH-RISK, LOW-INCOME LATINAS

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Background: Hispanic-Americans are one of the fastest growing ethnic groups in America. This group is at a disproportionate risk of suffering from diabetes. Hispanic women are of particular risk; in 2014, their lifetime risk of being diagnosed with diabetes exceeded 50%, almost twice the risk for non-Hispanic white women. Latinas also report higher levels of stress, which may impede their ability to manage diabetes. Previous research suggests that stress negatively affects health behaviors such as eating and exercise.

Purpose: This study aims to investigate the associations between perceived stress and: (1) indicators of diabetes control; (2) behaviors related to diabetes management (e.g., medication adherence, testing blood sugar); and (3) general health behaviors.

Methods: Data was derived from 89 women who identified as Latina and were diagnosed with diabetes. Participants were recruited to enroll in *Unidas por la Vida*, a lifestyle diet and exercise intervention for Latina mothers with diabetes and their overweight adult daughters. Participants completed a baseline questionnaire to assess perceived stress (nine-item Perceived Stress Scale), frequency of hypoglycemia, behaviors related to diabetes management, and diet and physical activity. Women's glycated hemoglobin (HbA1c; average blood sugar levels over 3 months) was also measured. Bivariate analyses were conducted to examine correlations between stress and the primary outcomes.

Results: On average, participants evidenced high levels of stress ($M = 15.1$, $SD = 6.5$). Stress was positively correlated with experiencing a major hypoglycemic episode ($r = 0.28$, $p < 0.05$); however, stress was not associated with HbA1C level ($p = 0.47$). Stress was also associated with fewer diabetes self-management behaviors (e.g. remembering to test blood sugar, $r = -0.24$, $p < 0.05$), but not with medication adherence ($p = 0.93$). Finally, stress was associated with greater reports of exercise barriers ($r = 0.42$, $p < 0.01$) and lower reports of exercising daily ($r = -.029$, $p < 0.05$).

Conclusions: Findings from this study suggest that stress may influence certain health behaviors in diabetic Latinas. Assessment of stress may predict effective management of diabetes. In addition to promoting exercise and a healthy diet, health care providers should also provide resources for stress management and coping techniques.

Key words: stress, diabetes, Latina, health behaviors, control

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THE ROLE OF SES IN HEALTH DISPARITIES AMONG LATINO AND NON-LATINO WHITE YOUTH WITH DIABETES: A SYSTEMATIC REVIEW

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Latino youth are the fastest growing minority population in the US, and may have higher risk for adverse diabetes-related health than non-Latino Whites (NLW). However, the extant literature on the presence of ethnic disparities in diabetes (e.g., prevalence, BMI, glycemic control) among NLW youth is inconsistent, possibly due to methodological decisions regarding socioeconomic status (SES). Low SES is a known risk factor for poor diabetes health, and Latinos are often of lower SES than NLWs, but research has not consistently evaluated whether ethnic disparities exist independent of SES. SES, rather than more cultural aspects of ethnicity, may account for disparities, and SES may moderate ethnic health disparities (consistent with the Hispanic paradox). The current study systematically reviewed the literature to elucidate the presence of disparities in diabetes health among Latino and NLW youth, and to understand the role of SES in explaining such disparities. The MEDLINE and PSYCINFO databases were searched for peer-reviewed literature that compared Latino and NLW children, adolescents, and emerging adults (ages 0 to 22) on illness-related characteristics for type 1 and type 2 diabetes. After excluding 497 studies, a total of 45 articles were sourced: 26 examined type 1 diabetes, 9 examined type 2 diabetes, and 10 examined both type 1 and type 2. In 51.1% of studies, Latino youth were reported to have poorer diabetes-related characteristics (e.g., higher BMI, higher prevalence, poorer metabolic control) than NLWs. Only two-thirds (66.6%) of all studies reported any measure of SES, and of these, only 63.3% included SES in analyses to determine whether ethnic disparities exist independent of SES. In the 24.4% of studies which reported analyses with and without covarying SES, 41.6% found that controlling for SES eliminated the Latino disparity. Only 15.5% examined if SES moderated ethnic disparities, with most finding no interaction, and two finding opposite results. The rapid growth of the Latino youth population, and their increasing prevalence of diabetes, has led to concerns of ethnic disparities in diabetes health in youth. The extant literature is inconsistent as to the presence of Latino disparities, and raises questions about whether disparities exist independent of SES. Future research that systematically evaluates the role of cultural and SES-related processes is necessary to guide effective approaches to minimize disparities in this vulnerable population.

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CITATION AND MERITORIOUS AWARD
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TRAJECTORIES OF GLYCEMIC CONTROL AMONG DIVERSE
YOUTH FROM THE TYPE 1 DIABETES EXCHANGE CLINIC
REGISTRY

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Adolescence is a time of known risk to glycemic control among youth with type 1 diabetes (T1D). Despite evidence suggesting that minority youth may be at higher risk for poorer glycemic control, deterioration in glycemic control across adolescence has been typically studied among non-Latino Whites (NLW). Examining race/ethnic differences in control trajectories across adolescence may illuminate developmental periods when disparities appear. Further, minority youth often have reduced socioeconomic resources, a risk factor for poor T1D management, but the role of socioeconomic status (SES) in ethnic disparities has rarely been studied. The present study examined whether race/ethnicity and SES worked independently or interactively to predict longitudinal trajectories in glycemic control across adolescence (ages 10 to 18). Adolescent data from the national Type 1 Diabetes Exchange Clinic Registry ($N = 5,963$; 48.6% female; 83.2% non-Latino White, 11.3% Latino, 5.5% Black) was used. Glycemic control was indexed via HbA1c in clinic records obtained across time from ages 10 to 18; an average of 25.7 HbA1c assays were available per participant across time. Annual household income indexed SES. Hierarchical linear modeling estimated HbA1c trajectories across adolescence, and examined whether ethnicity and SES were related to HbA1c at age 10, and rate of deterioration across time. Analyses without SES revealed that Blacks had poorer HbA1c at age 10, and deteriorated more rapidly across adolescence than NLWs. Latino youth had similar HbA1c at age 10, but deteriorated more rapidly across adolescence than NLW. Statistically controlling SES did not alter these findings, and SES did not moderate race/ethnicity effects. Independent of race/ethnicity, lower SES was associated with poorer HbA1c at age 10, and with more rapid deterioration across age. Results highlight that race/ethnic minority status and lower SES may independently contribute to risks for poor glycemic control, and identifies adolescence as a developmental period of time when these risks are exacerbated. Future research to understand the developmental and socio-cultural processes that contribute to such risks will be necessary to guide effective interventions and support diabetes management in these at risk populations.

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UNIDAS POR LA VIDA: EXAMINING DIABETES MANAGEMENT
AND WEIGHT LOSS IN AN INTERVENTION DESIGNED FOR LATI-
NAS WITH TYPE 2 DIABETES

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Mexican-American women have one of the highest lifetime risks of developing diabetes, and compared to non-Hispanic whites, are more likely to suffer from diabetes-related sequela. Diligent self-management is a key factor in controlling diabetes and preventing complications; however, low physical activity and a high fat, high carbohydrate Americanized Mexican diet serve as commonly reported barriers toward sufficiently managing diabetes in Latinas. As such, it is essential that lifestyle interventions be culturally tailored and evidence-based to overcome common diabetes-related obstacles in order initiate and sustain health behavior change.

Purpose: We conducted a pilot randomized controlled trial testing the effectiveness of a dyadic lifestyle intervention (Unidas por la Vida) among Latina mothers with diabetes and their overweight/obese, at-risk adult daughters. This study examined whether a culturally tailored lifestyle intervention, modeled after the Diabetes Prevention Program, was associated with fewer hassles/barriers around diabetes management (e.g., planning meals, testing blood sugar), greater diabetes control, greater weight loss, and glycemic control in Latinas with type 2 diabetes relative to usual care.

Method: Data were derived from 89 Latinas (mothers) who were overweight/obese, had a clinical diagnosis of type 2 diabetes, and were randomized to either the intervention or usual care. Self-reported measures of diabetes-related hassles and diabetes control, and clinical markers of weight (lbs) and glycemic control (HbA1c) were collected at baseline and 16 weeks.

Results: Demographic results were reported previously (Sorkin et al. 2014). Latinas in the intervention group reported having significantly fewer diabetes-related hassles ($\beta = -0.21$, $p = 0.04$) and had greater weight loss ($\beta = -.05$, $p = 0.004$) at study completion, relative to Latinas in usual care. However, no significant intervention effects were observed in self-reported diabetes control and in actual glycemic control.

Discussion: The findings demonstrate that the Unidas pilot intervention was effective in promoting weight loss and reducing self-reported hassles and obstacles around diabetes management. Perhaps the 16 week interval was too brief to capture modulations in HbA1c levels, and by extension, self-reported diabetes control. Implications for tailoring weight loss interventions to Latinas with diabetes will be discussed.

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USE AND BENEFITS OF A STUDY HELPLINE IN A BEHAVIORAL RANDOMIZED CONTROLLED TRIAL

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Helplines are widely used to offer convenient and prompt access to information and support; however, their use in research studies for study-related questions/concerns is uncommon. We developed and implemented a Helpline for the REACH study, a 15-month randomized controlled trial evaluating mobile phone-based support for improving self-care and glycemic control among adults with type 2 diabetes. The purpose of the Helpline is for potential participants to express interest in the study, and currently enrolled participants to report technical problems with the mobile phone program, and ask study- and diabetes medication-related questions. The Helpline is listed as the point of contact on recruitment materials. At study enrollment, we tell participants about the other uses of the Helpline and assist with programming the number in their cell phone. Helpline callers are instructed to leave a voicemail after which study staff receive an e-mail notification, log on to a HIPAA-compliant website to access the voicemail, and return participants' call within one business day. All medication-related calls are returned by a clinical pharmacist, who can offer medication advice and communicate with participants' healthcare provider. Many participants express enthusiasm about the option to talk to a clinical pharmacist by calling the Helpline. Currently, 391 participants are enrolled in the study (52% female; 48% non-white; 58% income \leq \$35K). We have received a total of 248 calls on the Helpline since the beginning of the study in May 2016; 106 calls were from people who were not yet study participants (62% expressing interest in the study or scheduling enrollment appointments) and 142 were from enrolled study participants. Of the 85 unique participants who called the Helpline, 42% were in the control condition and 58% were in the intervention. The most common reasons for participant calls include: to learn their study A1c result (23%), to schedule/confirm study appointments (18%), to update contact and study-related information (11%), and to report technical problems (e.g., did not receive text messages as scheduled; 11%). Only 2 calls have been made to ask a question of the clinical pharmacist. In conclusion, a study Helpline has been a powerful tool for study recruitment and retention. The Helpline also provides an additional intervention component (i.e., option to talk to a clinical pharmacist), which study participants express excitement about but rarely use.

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A 'SNAP'SHOT OF THE RELATIONS BETWEEN SOCIAL MEDIA USE AND HEALTH BEHAVIORS IN COLLEGE

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Background: Information shared via social media is known to influence college students' health perceptions and behaviors. In particular, *fitspiration* posts on social media (i.e., images of healthy food or people exercising, fitness quotes) have been associated with both positive and negative outcomes for eating behavior and physical activity. Although information from posted images (vs. posted text) may have different effects, there has been little research on this distinction with respect to students' health behaviors. This study examined relations between students' health behaviors and (1) use of image-based (IB: Instagram, Snapchat) compared to text-based (TB: Twitter, blog sites) social media, and (2) exposure to fitspiration posts.

Methods: Participants were 336 college students (70% women, $M_{Age} = 19$, $M_{BMI} = 24 \text{ kg/m}^2$) who completed self-report measures of their social media use (hours per day), exposure to fitspiration posts, and health behaviors (alcohol consumption, sexual activity, eating behavior, physical activity). Participants also identified 3 healthy and 3 unhealthy behaviors they engage in regularly (free response).

Results: Snapchat, a newer platform that allows users to post images that disappear quickly, was the most popular type of IB media (85% reported use more than once per day). Twitter was the most popular type of TB media, though only 28% reported use more than once per day. Time spent on IB media was significantly longer than time spent on TB media ($p < 0.001, d = 0.79$). Greater time spent on IB media was associated with fewer days per week spent exercising ($r = -0.21, p < 0.001$). In contrast, greater time spent on TB media was associated with increased risky sexual activity ($r = 0.17$) and alcohol consumption ($r = 0.12; ps < 0.05$). Intentional exposure to fitspiration posts was positively associated with exercise, fruit consumption, vegetable consumption and junk food consumption ($ps < 0.03, \eta^2 = 0.04-0.14$). Unintentional exposure to fitspiration posts was positively associated only with exercise and fruit consumption ($ps < 0.05, \eta^2 = 0.05-0.07$). Time spent viewing IB and TB media was not associated with open-ended health behavior responses.

Conclusion: College students engage with image-based social media more frequently than with text-based social media; although their engagement with each type is differentially associated with their health behaviors, greater engagement is associated with worse health behaviors overall. Frequent viewing of fitspiration posts (both intentionally and unintentionally) was associated with better health behaviors, though intentional viewing was more strongly associated with eating behavior. Understanding relations between social media use and health behaviors in college could inform future interventions that incorporate these platforms to target specific health behaviors among students.

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A MODEL FOR DEFINING AND MEASURING USER ENGAGEMENT IN DIGITAL BEHAVIOR CHANGE INTERVENTIONS

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Researchers and practitioners of Digital Behavior Change Interventions (DBCIs) use varying and oftentimes incongruent definitions of the term engagement; thus, leading to lack of precision in DBCI measurement and evaluation. The objective of this project was to propose nuanced definitions for various types of user engagement and explain why precision in the measurement of these engagement types is integral to ensuring intervention effectiveness. Additionally, we developed a framework and practical steps for how engagement can be measured in practice and used to inform DBCI design and evaluation. In this presentation, we present an example of how the framework has been successfully applied to an actual DBCI.

Using available literature and practice-based knowledge of DBCIs, the framework conceptualizes two main categories of engagement that must be measured in DBCIs. The categories are *health behavior engagement*, referred to as “Big E” and *digital behavior change intervention (DBCI) engagement*, referred to as “Little e.” *DBCI engagement* is further bifurcated into two subclasses to represent engagement with discrete components of the intervention (i.e., user interface, user experience, content) and engagement with behavior change intervention components (i.e., behavior change techniques) compiled to influence determinants of health behavior and subsequently result in behavior change.

The key purpose of a DBCI is to influence change in a target health behavior of a user, which may ultimately improve a health outcome. Achievement of Big E, *health behavior engagement*, in an intervention delivered via digital means, is contingent upon Little e, *DBCI engagement*. If users do not interact with DBCI features and enjoy the user experience, the exposure to the behavior change intervention components is unlikely to influence behavioral determinants and lead to Big E, *health behavior engagement*. Big E, *health behavior engagement*, is also dependent upon the quality and relevance of the behavior change intervention components within the solution. Therefore, the combination of user interactions and behavior change intervention components create Little e, *DBCI engagement*, which in turn produces Big E, *health behavior engagement*.

The framework includes a logic model to support measurement of DBCIs that describes categories of engagement, details how components of Little e produce Big E, and provides suggestions for factors that should be measured in each engagement category.

The framework was applied to a real-world implementation of a DBCI with success, as measured by the ability to differentiate components of engagement for evaluation efforts. Examples of actual measurement metrics are provided. This framework can be applied to DBCIs supporting various health behaviors and outcomes and can be utilized to identify gaps in program efficacy and effectiveness.

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ARE NUMBER OF HEALTH COACH VISITS, WEARABLE USE ASSOCIATED WITH CHANGES IN CARDIOVASCULAR RISK IN AN EMPLOYEE WELLNESS PROGRAM?

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Background: Prior work has shown that health coaching in an employee wellness setting can improve behavior change and health outcomes. However, it is currently unknown what the dose response relationship association is between the number of health coaching visits and change in health outcomes. In addition, wellness programs increasingly use wearable sensors to collect data on participants health and behaviors. However, the effect of using wearables on the efficacy of health coaching is unknown.

Methods: We conducted a secondary analysis of data from the University of Utah’s wellness program. We began by creating a subset of individuals who had complete data from biometric screening in both 2016 and 2017. For each participant we counted the number of coaching visits from the number of unique visit notes written and determined whether they had wearable sensors connected to the programs electronic platform.

To determine what the average effect of health coaching visits and wearable sensors on health risk, we used a linear model that accounted for baseline ASCVD (Atherosclerotic Cardiovascular Disease) 10-year risk score and any differences in the demographics of participants who did or did not receive health coaching.

Results: 736 individuals had complete biometric screening data from both years, 282 of these individuals had at least one coaching session. 207 had at least one wearable sensor connected to the platform. Individuals who received coaching were likely to be older and female than individuals who did not receive coaching.

Results from the linear model suggest that for each coaching meeting there was a small but significant decrease in ASCVD risk (beta=-0.05, T=-2.34, p= 0.02), however the decrease in risk score for having a connected wearable sensor was not significant (beta= -0.11, T=-0.92, p=0.36). As expected, risk score decreased more for individual with higher baseline risk (beta=-0.17, t=-8.2, p < 0.0001), increased slightly with age (beta= 0.05, T= 8.6, p < 0.0001) and increased more for males than females (beta= 0.36, T=2.98, p= 0.003).

Conclusion: Health coaching visits were associated with decreases in objectively measured health risk, however, the use of connected wearable devices was not. In presenting this work we will discuss specific risk factors that changed with coaching and planned work to ascertain which behavior change techniques successful health coaches use with their clients.

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BASELINE SAMPLE CHARACTERISTICS AND 6-MONTH EVALUATION OF AN MHEALTH PROGRAM FOR PEOPLE WITH TYPE 2 DIABETES - MY DIABETES COACH

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Background and Aims: Type 2 diabetes (T2D) involves complex self-management which most healthcare systems are not able to support. My Diabetes Coach is an mHealth program using an interactive relational agent, 'Laura', supporting blood glucose monitoring and providing personalized feedback and advice. The aim of this presentation is to describe the baseline characteristics of study participants and 6-month data on program use.

Methods: MDC is a real world RCT undertaken in Australia. Participants were recruited through the National Diabetes Services Scheme, consumer diabetes organisations and Facebook. Participants completed clinical tests, demographics and self-report measures at baseline and 6-months. There were also extensive analytics for evaluating program use.

Results: 187 participants were randomized to a waitlist control (n=94) or intervention (n=93) condition. Participants were aged 56 ± 10 years, 45% (n=83) were women. At baseline, they had an HbA1c (average blood glucose) of $7.32 \pm 1.58\%$.

Sample characteristics: Almost half of the study participants were employed full-time (47%); most were between 50 and 69 years old (69%); and the majority had completed at least 12 years of education (53%).

Program use: Of the 93 participants randomly assigned to the intervention group, 56% used a smartphone, 14% used a tablet, and 30% used both to access the MDC app. At 6 months, n=79 (85%) were still using the MDC app to complete chats with Laura, self-monitor their glucose levels, access the program website, and/or participate in the MDC online community discussions. Of these, 50% were weekly chats, 15% fortnightly, 18% monthly and 17% were less than once a month. Over the 6 months, participants had responded to a total of 57,265 statements and questions asked by Laura; and an average of 622 statements per participant.

Conclusions: We have recruited a diverse sample of people with diabetes from around Australia. Smartphones were preferred for program access. Program uptake and use was excellent when compared with other similar technology interventions delivered by phone. Program delivery resulted in on-going, weekly use for most MDC participants. The level and frequency of program use suggests a high degree of program engagement.

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DEVELOPMENT AND USABILITY OF A MHEALTH INTERVENTION TO REDUCE SEDENTARY BEHAVIOR BEFORE AND AFTER CANCER SURGERY

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Background: Sedentary behavior is common after cancer surgery and can negatively affect health and quality of life. Here we report on the first phase of development and testing of a mHealth intervention to address this issue. A smartwatch app was developed to detect prolonged sedentary behavior bouts and prompt patients to take brief walking breaks, with timing of prompts based on symptom severity monitored with a companion smartphone app.

Methods: Eight patients who underwent abdominal cancer surgery in the past year (M age = 52, 63% female, M = 127 days since surgery) participated in individual qualitative interviews and usability testing. The semi-structured interview included questions about activity patterns and barriers to and facilitators of activity before and after surgery. Transcripts were reviewed for common themes. Participants were guided through interactions with the smartphone and smartwatch apps and were instructed to "think aloud" about their experiences and rate the system's ease of use and pleasantness of the interface from 0 (worst) to 100 (best).

Results: Evolving barriers to and facilitators of activity over the perioperative course were described by patients. Prior to surgery, symptoms related to cancer/treatment (e.g., fatigue, nausea) as well as work and caregiving responsibilities made it difficult to be active, while family activities, owning a dog, and having an established exercise routine helped. During inpatient recovery, symptoms such as dizziness and lack of sleep were described as key barriers to activity, along with IVs/monitors and lack of pleasant environment in which to walk. Adequate pain management and encouragement from family and providers emerged as facilitators of inpatient activity. After discharge, depression and persistent physical symptoms interfered with activity, while personal goals and time off from other responsibilities motivated activity. Patients rated both the smartphone and smartwatch apps as easy to use (M = 88 and 80, respectively) and both interfaces as pleasant (M = 87 and 83).

Conclusion: Preliminary results suggest that our mHealth intervention to reduce sedentary behavior has good usability. Patients reported that symptoms were a consistent barrier to activity, with additional evolving barriers over the perioperative course that could be considered in further refinement of the app. The intervention will be evaluated in a randomized clinical trial later this year (NCT03211806).

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DIGITAL HEALTH TOOLS FOR CHRONIC ILLNESS AND DEMENTIA RISK ASSESSMENT IN OLDER ADULTS

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The current state we live in is that populations are growing and the average human lifespan is longer. Seniors may be especially vulnerable to experience poor lifestyle choices as they are out of work, do not exercise, live alone without most opportunity to socialize, may be smoking and having poor diet. Poor lifestyle choices may be developing over a longer period, resulting in chronic illness or dementia later in life. While chronic illness like cardiovascular disease, diabetes influences the physical body, individuals with dementia are losing their memory and experience decline in their cognitive functions. Getting chronic illness or dementia can affect their everyday life to such an extent that they depend on others to function. To our knowledge, curing chronic illness or dementia with pharmaceutical treatments is not possible.

As ever-sophisticated wearable activity trackers and mobile applications enable to assess individual's daily life patterns and risk factors influencing their long-term health state, we have attempted to operationalize the major risk factors for the prevalence of poor lifestyle choices in older adults - including physical factors (e.g., exercise, alcohol), psychological factors (e.g., stress, depression), social factors (e.g., loneliness) and environmental factors (e.g., risk of a country at large). We have thoroughly examined these factors to identify which of those can be operationalized via ICT-based tools and quantified by leveraging unobtrusive sensors, including sensors embedded in personal smartphones and wearables. Such an operationalization will enable to provide reliable assessment and prediction of risk exposure, which, in turns, will permit early recognition and preventive interventions.

To support our research claims we have conducted an explorative pilot study with twenty older adults (>65 years old) in Hungary and Spain wearing Fitbit Charge 2 activity and sleep tracker for a minimum of three months each, as well as providing a set of self-reported measures like blood pressure, diet or alcohol. We provide the risk assessment for their cardiovascular disease as well as dementia, as supported by the latest evidence from the medical literature.

Additionally, we discuss the implications for further research in this domain, where the wearable device's features like interaction design, battery lifetime and fashion-ability; influence the quality of the data collected. Given the results and existing research so far, we discuss design implications for monitoring and assessment of multi-dimensional lifestyle factors and behavioral variables in the natural daily settings of the older adults, ideally leveraged towards their behavior change and prevention of chronic illness like cardiovascular disease as well as dementia in a long term.

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FEASIBILITY OF A MOBILE HEALTH-INFUSED DANCE PROGRAM FOR MIDDLE-AGED AND OLDER LATINOS

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More than 21 million Latinos 55 years and older live in the U.S. Older Latinos have low levels of physical activity and high risk of chronic diseases. Dance is a culturally appropriate form of physical activity to address these risks. Also, technology ownership is increasing among older Latinos; therefore, mobile health could be an appropriate strategy to promote physical activity among this population. The purpose of this study was to assess the feasibility of a mobile health-infused dance program for middle-aged and older Latinos. A single group pre- post feasibility trial was conducted for 16 weeks. Mobile health components (wearable, mobile application, and text messages) were added to the BAILAMOS© dance program. Classes were held twice a week for two hours each session. The first 30 minutes were devoted to a technology class, followed by one hour of the BAILAMOS© Latin dance program, and an extra 30 minutes of technology practice. Participants wore a wearable fitness tracker for 18 weeks (16 weeks of the program + baseline and post testing weeks) and received text messages for 12 weeks (last 12 weeks because many participants needed training in reading messages). Feasibility was assessed by recruitment capability (e.g., recruitment strategies); acceptability and suitability (e.g., enjoyment); and resources (e.g., monetary costs). Recruitment was conducted for eight weeks. The main recruitment strategies were announcements at the host senior center, and having the study announcement printed in Catholic churches' weekly bulletins. Fifty-eight middle-aged and older Latinos who owned a smartphone were assessed for eligibility, and 20 participants (34%) started the intervention (female n=15, M age = 67). Twenty participants (100%) wore the wearable for the 18 weeks, and 17 participants (85%) completed the dance program. In debriefing sessions, participants reported great enjoyment of the program and stated that it was too short. The most valuable components of the intervention were the dance and technology classes, and the support provided by the instructors that taught the technology classes. Costs for the intervention was \$8140 (i.e., dance instructor, wearables, text messages, participant compensation, data collector). Thus, a mobile health-infused dance program appears feasible for middle-aged and older Latinos. Funding provided by the UIC Department of Kinesiology and Nutrition.

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GENDER, RACIAL, AND ETHNIC DISPARITIES IN YOUNG ADULTS' MOBILE TECHNOLOGY USE AND MHEALTH TEXT MESSAGE PREFERENCES

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Risky health behaviors (e.g., substance use, unhealthy eating behaviors), inadequate health promoting behaviors (e.g., sedentary lifestyle), and mental health concerns (e.g., depression, anxiety) are common in young adults, and can adversely impact health and well-being. To address these behaviors and concerns and to promote holistic health, mobile health (mHealth) interventions have been created. Yet, little is known about how to aptly design these treatments for use with young adults. To enhance mHealth intervention design and delivery, this study surveyed a large, racially diverse sample of 1,371 college students ($Mage=20.54$) who answered an online survey designed to meet two aims: 1) examine mobile technology ownership and use; 2) assess preferences in text message content, tone, and style. Descriptive statistics and chi-square tests examined gender (337 male, 1,027 female), racial (563 Black, 640 White), and ethnic (109 Latino, 1,262 non-Latino) differences. Addressing Aim 1, 99.5% of participants owned smartphones and $\geq 92.0\%$ used various mobile phone features daily (e.g., text, email, internet, apps). Compared to their gender and racial counterparts, more females owned Apple smartphones and had unlimited data, more female and Black respondents had unlimited texting, more males owned Android smartphones, and more White respondents had long-term contracts ($ps < .05$). Also, more females than males texted and used email on mobile devices daily, and more Black than White participants used the internet on mobile devices daily ($ps < .01$). Addressing Aim 2, young adults preferred texts that were grammatically correct, polite, nondirective, had a statement and emphatic linguistic features. Notably, more females preferred a long message and emoji use, and more female and White individuals preferred a polite message than male and Black respondents ($ps < .04$). This study is first to concurrently assess technology use and mHealth text message preferences relative to young adults' gender, racial, and ethnic identities. These results can increase the acceptability, usability, and efficacy of mHealth interventions, with the goal of improving the health and well-being of diverse young adult subsets. By understanding technology use and text preferences, researchers can tailor mHealth treatments to these populations, increase engagement, and improve treatment outcomes. This line of work ultimately aims to create feasible and effective mHealth interventions for young adults.

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INTERVENTION INC, A TECHNOLOGY-ENHANCED CHILDHOOD OBESITY INTERVENTION: CHILD AND PARENT BASELINE CHARACTERISTICS

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Introduction: Childhood obesity is a public health crisis in the United States, particularly in low-income, minority populations. Technology-based tools may be an engaging approach to reach at-risk youth and their parents to reduce childhood obesity risk.

Methods: Latino/Black children 9–12 years, and their parent/guardian were recruited to participate in *Intervention INC*, an innovative technology-enhanced health promotion tool. It comprises a web-based 6-chapter (6-week) interactive nutrition comic optimized for use on tablets. Recruitment strategies consisted of community flyering and event tabling, letters to clinic patients, and local organization and study participant referrals. From August to November 2017, parent-child dyads were randomized to the experimental (E) (web-based intervention) or control (C) (online newsletters) group. Intervention content was tailored to a targeted behavior (fruit/vegetable (F/V) or water) based on initial screening questions. Baseline surveys were completed for demographic variables, technology use, child dietary behaviors, home food environment, and parental feeding practices. Descriptive analyses were conducted for demographic and technology characteristics using chi-square tests for categorical variables and 95% confidence intervals for numerical variables to assess differences.

Results: Most successful recruitment strategies included community flyering and event tabling. Of 153 dyads screened, 131 (85.5%) were eligible to participate. Primary reasons for ineligibility included child reading difficulties (11.5%), child age (7.2%) and inability to attend all study sessions (6.6%). A total of 89 dyads (E: n=45, C: n=44) were enrolled. Parent demographics included: mean age=30.8 \pm 8.9 years; 94.4% female; 55.1% Black, 44.9% Hispanic; and 82% English-speaking. One-third had an annual household income of $< \$20,000$ and 60.2% received SNAP benefits. Regarding technology, 56.2% reported using an Android phone and 20.2% shared their smartphone, most often with their child/ren (18.0%). Child demographics included: mean age=10.4 \pm 1.0 years; mean BMI percentile=73.9 \pm 26.9; 60.7% female; 61.8% Black, and 41.6% Hispanic. Nearly 60% received content tailored to F/V behavior. Regarding technology, 46.1% used an Android phone and 30.3% reported sharing a smartphone, most often with their mother (13.5%). No significant differences were found between E and C for demographic and technology characteristics, except for parent smartphone type ($p=0.015$).

Discussion: Key community recruitment strategies led to successful enrollment of low-income minority preadolescents at-risk for childhood obesity and their parent/guardian. This study will test the feasibility and potential impact of an innovative interactive health promotion tool designed and individually tailored to this population.

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MOTIVATION OR SELF-EFFICACY? EXAMINING WHICH CONSTRUCT BETTER EXPLAINS THE ASSOCIATION OF BODY DISSATISFACTION WITH EXERCISE

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Regular physical activity (PA) is critical for maintaining a healthy body weight and preventing disease, but it declines in young adulthood. Body dissatisfaction (BS), which increases during young adulthood, may inhibit rather than motivate physical activity. Evidence suggests that components of Social Cognitive Theory (SCT) and Self-Determination Theory (SDT), self-efficacy and autonomous motivation respectively, may explain this counterintuitive association – self-efficacy likely as a moderator and motivation as a mediator or moderator. However, research is needed that directly compares each of these hypothesized models using prospective, objective data to determine which are strongest and most useful for interventions aiming to mitigate the adverse effect of BS on PA.

Participants ($n = 121$, 73% White, $m = 25y$, $BMI = 24kg/m^2$, 75% female) reported their body dissatisfaction, motivation for PA, and self-efficacy for PA. Fitbits recorded each participant's PA over the following two weeks. Bootstrapping Process Macro's six and two were used to test the extent to which autonomous motivation and self-efficacy mediated and moderated the association of BS with PA respectively, adjusting for gender, BMI, and age. Bootstrapping allowed for more reliable results than regression analyses while also directly comparing various mediation and moderation models.

Mediation results revealed that the association of BS with PA was driven primarily by autonomous motivation and not by self-efficacy. Bootstrapping results showed a strong indirect effect of BS on PA through autonomous motivation (indirect effect = 3.05, $SE = 1.56$, 95% CI: .38, 6.5) but no significant indirect effect of BS on PA through self-efficacy (indirect effect = -1.56, $SE = 1.53$, 95% CI: -5.36, 1.42). Moderation results using bootstrapping showed that neither autonomous motivation (interaction coefficient = 1.57, $SE = .91$, $p = .09$) nor self-efficacy (interaction coefficient = 2.14, $SE = 6.89$, $p = .76$) significantly moderated the association of BS with PA, although the coefficient for the BS*autonomous motivation interaction did approach significance.

Findings support and extend previous literature by using objective and prospective data to directly compare two constructs believed to help explain the association of BS with PA. Findings clearly show that autonomous motivation, not self-efficacy, explains the association of BS with PA. Further, findings suggest that a mediation rather than moderation model is most appropriate for understanding these associations, as is suggested by Self-Determination Theory. These findings inform future interventions and suggest that using resources to improve autonomous motivation rather than self-efficacy for PA may be a more effective and efficient approach to mitigating the adverse effect of body dissatisfaction on PA in young adults.

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OPPORTUNITIES FOR VIDEO-ENABLED TABLETS TO ENHANCE ACCESS FOR VETERANS WITH BARRIERS TO IN-PERSON CARE

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Background: Rural and low-income Veterans encounter multiple barriers to receiving in-person care at Veterans Health Administration (VHA) facilities. In 2016, the VHA launched an initiative to issue video-enabled tablets to Veterans with geographic, clinical, or social barriers to accessing in-person care. The objective of this study is to understand these Veterans' current use of technology and self-reported barriers to care.

Methods: We mailed a survey to 2,200 Veterans who received a tablet from VHA to facilitate remote video visits in their homes. Survey respondents were queried about their current technology use, barriers to health care access, transportation-related costs to accessing clinical care, social support, and current financial stability. Patient demographics and clinical characteristics were confirmed using administrative data.

Results: Among the 1,283 survey respondents (response rate 59%), characteristics resembled the broader VA population: they were predominately males (83%), Caucasian (75.6%), married (58%), and mean (SD) age was 57(16) years. Survey respondents reported using the VHA for most of their primary (78%) and mental health care (78%). 87% of respondents reported at least one barrier to accessing VA care, the most common barriers included travel time (67%), cost of travel (55%), current health conditions (54%), and poor weather (57%). Common socioeconomic barriers included financial strain and limited social support: Over two-thirds reported at least some difficulty "making ends meet" (69%); and approximately one third reported insufficient social support for their health and daily living needs. Participants reported high rates of health-related technology use: 75% have used the VHA's electronic personal health record system to manage their health care (including to check their records, refill a prescription, communicate with their provider, or monitor their health conditions), and 58% reported using technology to search for health information. Overall, 74% reported that video visits could help them access their VHA providers.

Conclusions: Video-enabled tablets have the potential to enhance access for patients in broadband accessible locations with barriers to in-person care. An ongoing evaluation of the program is investigating how this technology influences patients' experiences with and engagement in their care.

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RELATIONAL AGENT

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Background: Healthcare systems have adopted Screening, Brief Intervention, and Referral to Treatment (SBIRT) as an effective method for addressing unhealthy alcohol use. In VA primary care, providers are required to screen patients annually and provide brief intervention (BI) and referral to specialty care if needed. Research demonstrates this requirement is implemented unevenly at best. We hypothesized that a computer character (Relational Agent; RA) designed to build rapport with patients could improve the rate of BI and referral, as well as decreasing drinking.

Methods: Participants are referred from primary care staff, or by invitations sent to veterans at VA Boston Healthcare System who scored positive on the Alcohol Use Disorders Identification Test-Consumption (AUD-C). Participants are randomized into one of two groups: Relational Agent plus Treatment as Usual (RA+TAU) or Treatment as Usual (TAU). In contrast to prior research that focused only on risky drinkers, anyone who scores positive on the AUD-C is eligible, replicating real world clinic conditions. Participants are then stratified based on severity of alcohol use (Risky Drinking vs. Alcohol Use Disorders) and gender. Those randomized into RA+TAU receive 2 “sessions” with the RA, which is customized to the veterans at this facility. The RA delivers a BI and offers referral as appropriate. Participants provide open-ended feedback after completing each RA session.

Results: Recruitment is ongoing: 43 of 180 participants have completed to date. The majority of participants who provided feedback on the RA program felt the RA was polite, empathetic, and similar to a therapist. Participants also liked that the RA used their name and remembered information about the participant from Session 1 during Session 2. For both conditions, it appears drinking decreased from baseline to 3-month follow-up in Drinks per Drinking Day (DDD) and Average Weekly Drinks (AWD). Although RA+TAU appeared to show greater decreases in drinking, there is not enough power in this preliminary sample to determine significance. The RA has successfully referred 12 participants to treatment whereas primary care only referred one participant.

Discussion: SBIRT can be expanded to include all patients with unhealthy alcohol use, not just risky drinkers, if the goals are different (referral to treatment vs. decrease in drinking). Patients like talking with RAs, and they can be used effectively to provide BI and offer referral.

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TOWARD #FITSPARATION AS A TOOL FOR HEALTH PROMOTION: EXAMINING THE PERCEPTIONS OF FITSTAGRAMERS AND FOLLOWERS

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Background: Young adulthood is a critical period of risk for weight gain and sedentary behavior, which may persist into later adulthood. Trends on social media are known to influence young adults' health behaviors; for example, the #fitspiration trend allows users to view fitness and nutrition posts on Instagram. Due to its popularity among young adults, fitspiration may be useful for health promotion in this population, though little is known about (1) young adults' preferences for and responses to various types of fitspiration posts, and (2) how their preferences and responses align with posters' intentions. The goal of this study was to examine the perceptions and experiences of both people who follow fitspiration accounts (followers) and those who post fitspiration content (fitstagramers).

Method: Participants ($N=120$) were 63 college students who actively follow fitspiration accounts on Instagram (92% women, $M_{Age}=21.7$ years) and 57 fitstagramers (68% women, $M_{Age}=29.9$ years). Participants answered questions about their fitspiration experiences: reasons for posting/following, frequency of posting/viewing fitspiration posts, and their common reactions to fitspiration posts, and were asked to select one of six fitspiration images they found most motivating.

Results: Young adult followers reported the most common reasons for following fitspiration were to learn exercises and tips that they could use for themselves (84%) and to be inspired to exercise (88%). Among fitstagramers, the most common reasons for posting fitspiration were to inspire others (81%) and to keep themselves motivated and accountable (74%). Some fitstagramers and followers reported feeling mostly positive (e.g. inspired, confident) when viewing fitspiration posts (followers 11%, fitstagramers 42%). However, much larger subsets reported feeling negative (e.g. frustrated, ashamed) at least sometimes (followers 64%, fitstagramers 50%). Both followers (25%) and fitstagramers (31%) selected an image with the underlying message of ‘fitness is earned and not given’ as the one they found most inspiring.

Conclusion: The recent #fitspiration trend provides an opportunity to understand how Instagram users share and respond to health content on social media. Followers use this hashtag for both inspiration and information, whereas fitstagramers use it as an opportunity to inspire and to keep themselves accountable. Both fitstagramers and followers prefer the fitspiration image that conveyed the importance of hard work to other types of posts. However, given that large groups of both followers and fitstagramers sometimes have negative responses to fitspiration posts (perhaps due to negative social comparisons), there is need for further investigation into the potential for this trend to promote health.

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U-HEALTHCARE SERVICE FOR THE MANAGEMENT OF METABOLIC SYNDROME: A PILOT STUDY CONDUCTED IN A KOREAN PUBLIC HEALTH CENTER

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Background: u-Healthcare service (UHS) uses the wired/wireless communication network infrastructure to prevent disease and provide personalized healthcare services regardless of place and time. The 2011 National Health and Nutrition Examination Survey conducted in Korea reported that 50% of Koreans have one or two metabolic syndrome risk factors and 23.3% have three to five risk factors. Therefore, the Ministry of Health and Welfare provided a public health center-based pilot UHS for metabolic syndrome (MS) management.

Purpose: This pilot study aimed to describe the use of UHS and identify the relationships between health literacy (HL), service quality (SQ), service value (SV), communication (C), service satisfaction (SS), and intention to reuse (IR) for the management of MS in a Korean public health center.

Methods: A cross-sectional survey using convenience sampling of elders (n=41; 65.2 ± 9.4) was utilized. Data were analyzed by SPSS 20.0. Measurements used were: HL ($\alpha = .933$), SQ ($\alpha = .890$), SV ($\alpha = .841$), C ($\alpha = .971$), SS ($\alpha = .976$) and IR ($\alpha = .933$). All except IR (7-Likert scale) are 5-Likert scale.

Results: The majority were women (68.3%), married (81.6%), house wives (47.5%), unemployed (27.5%), middle school graduates (48.6%); had monthly income less than \$1,000 (48.5%); used u-Healthcare service less than 6 months (68.6%). Respondents reported: SS (4.2 ± 1.0), SV (4.0 ± 0.8), SQ (3.8 ± 0.8), C (3.8 ± 0.9), IR (5.8 ± 1.6), HL (3.0 ± 0.1). Users who earn less than \$1,000 reported SQ, SV, C and IR higher; who used UHS more than six months reported SV, SS and C higher. SQ was positively related to SV ($r = .576, p < .001$), C ($r = .484, p = .001$), SS ($r = .495, p = .001$), IR ($r = .570, p < .001$); SV was positively related to C ($r = .723, p < .001$), SS ($r = .640, p < .001$), IR ($r = .644, p < .001$); HL was positively related to IR ($r = .378, p < .015$); C was positively related to SV ($r = .723, p < .001$), SS ($r = .815, p < .001$), IR ($r = .727, p < .001$); SS was positively related to IR ($r = .771, p < .001$).

Conclusion: UHS for MS management is valuable as a public health service for people with low income. To increase IR, it is necessary to improve HL of its users. Strategies for good communication with healthcare providers, which us based on individual attention, increase SS.

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CONTENT FOR A COGNITIVE BEHAVIORAL THERAPY APP IDENTIFIED BY VETERANS OF THE IRAQ AND AFGHANISTAN CONFLICTS AND VA THERAPISTS

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Psychiatric and adjustment sequelae are common among Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and Operation New Dawn (OND) Veterans. Although cognitive behavioral therapy (CBT) is the leading evidence-based treatment for Veterans, the clinical response to CBT is variable. A smartphone app, tailored for OEF/OIF/OND Veterans, may improve CBT outcomes by improving CBT practice.

To tailor an existing CBT phone app (CBT MobileWork) for Veterans, we conducted semi-structured interviews with 15 OEF/OIF/OND Veterans and five Veterans Administration (VA) CBT therapists. The interviews addressed psychiatric symptoms, adjustment difficulties, treatment barriers, and participant evaluation of CBT MobileWork. Participants rated 13 components of the app on a 1–10-point scale (10 most favorable) and identified areas for improvement.

Participants comprised 15 primarily married/cohabiting (50%), Caucasian (93%), male (60%) OEF/OIF/OND Veterans, with a mean age of 38 years, 15 years of education, and 1.5 combat deployments. Participants met the following DSM criteria: major depression 66.7%; panic disorder 80%; agoraphobia 53.3%; post-traumatic stress disorder (PTSD) 53.3%; generalized anxiety disorder 53.3%. The five VA CBT therapists were primarily female (80%) and doctorally trained.

Ratings of the app components among Veteran participants averaged 8.83 (range 8.42–9.15). The therapist rating averaged 8.23 (range 7.00–9.60). Content analysis of interview transcripts yielded the following themes for improvement: *topical* (normalization of reintegration experience; inspirational Veteran quotes and humor; military model of decision making); *features* (coping card; lifeline for suicidal symptoms); *CBT exercise additions* (dealing with panic attacks, PTSD, anger, and irritability; improving assertiveness; enhancing reintegration and stabilization); *additional links* (VA websites and resources); *functionality* (expand mood lists and multiple graphs; link with educational components; low mood ratings connect to crisis numbers); *approaches* (reinforcement; corrective experiences; clear semantics).

CBT MobileWork was rated favorably by OEF/OIF/OND Veterans and VA CBT therapists. In the next stage of our research, information about vital mental health concerns will be addressed in the modified app (CBT MobileWork-V) and we will engage Veterans and VA clinicians in evaluation of the adequacy of the modifications to CBT MobileWork-V (software and clinical content).

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EFFECT OF A WEB-BASED INTERACTIVE SIMULATION ON CLINICIAN'S INTENTIONS TO PROVIDE PA COUNSELING TO ADULTS WITH TYPE-2 DIABETES

Leah Yingling, BS¹, ashwini Janamatti, M.S, B.E.², Ingrid Oakley-Girvan, PhD MPH BS³, Bryan Gibson, DPT, PhD¹, Nancy A. Allen, PhD¹¹University of Utah, Salt Lake City, UT; ²Larry H Miller Sports and Entertainment, salt lake city, UT; ³Cancer Prevention Institute of California (CPIC), Fremont, CA**Background:** Counseling about the benefits of physical activity (PA) is known to facilitate behavior change among patients with Type-2 Diabetes (T2DM). Unfortunately, healthcare providers do not provide PA counseling to patients with T2DM as frequently as recommended.**Objective:** We conducted a within-subjects study to determine whether an interactive simulation showing the immediate effects of PA on blood glucose (BG) would alter healthcare providers' beliefs about PA and increase their intentions to provide PA counseling to patients with T2DM.**Methods:** A link to the web-based simulation was distributed to participants via e-mail. After participants consented, they completed a questionnaire capturing demographic information, PA and T2DM-related knowledge, and intentions to counsel patients. Participants were then shown a simulated diurnal BG curve and asked to draw the expected difference in the curve if the simulated patient had walked for 30 minutes (i.e., outcome expectancy). Participants then used an interactive simulation to explore the expected effect of PA (e.g., walking) on the glucose curve. After the simulation, participants completed a second drawing of their outcome expectancy and finally a questionnaire that captured PA and T2DM-related knowledge and intentions to counsel patients.

A paired t-test was used to compare the difference of differences between the change in area under the curve in the simulation and the participants' two drawings. Paired t-tests were also used to test if participants' perceived knowledge of the benefits of walking on BG and intentions to counsel patients increased. Quantitative and qualitative data on participants' perceptions of the drawing tasks and simulation were also collected.

Results: A total of 243 healthcare providers (n=135) and trainees (n=108) visited the simulation website and provided complete data. Participants varied in age (22–78 years, mean= 38.3 ± 12.7) and were primarily white (80%, n=195) and female (74%, n=181). Provider type (i.e., MD/DO, NP/PA, RN/LPN, etc.) varied among participants, with MD/DOs comprising the largest percentage (28%, n=69).

Participants' outcome expectancies shifted toward the outcome presented by the simulation (mean change in differences= 2588.8 mg/dl*min, t=5.11, p<0.001). Additionally, providers' intentions to counsel patients increased (mean change= 0.49/5.0, t=6.64, p<0.001), as did PA and T2DM-related knowledge (mean change= 0.31, t=4.30, p<0.001). Qualitative feedback from 36 participants suggested improvements for future work.

Conclusion: A novel web-based simulation is effective for changing providers' beliefs and increasing intentions to counsel patients with T2DM on the benefits of PA. We will discuss applications of our results to the design of a clinically integrated mHealth intervention.

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A REVIEW TO IDENTIFY THE USE OF BEHAVIOR CHANGE TECHNIQUES IN TECHNOLOGY-BASED HEALTH INTERVENTIONS FOR PHYSICAL ACTIVITY

Carmina G. Valle, PhD, MPH¹, Sarah Mye, MPH², Lara Balian, MPH², Deborah F. Tate, Ph.D.¹¹University of North Carolina at Chapel Hill, Chapel Hill, NC; ²UNC - Chapel Hill, Carrboro, NC**Introduction:** eHealth interventions have been shown to have positive effects on physical activity, but less is known about what technology-delivered behavior change techniques (BCTs) drive behavior change. This systematic review evaluates BCTs used in technology-delivered physical activity interventions to identify the additive effects of BCTs on outcome(s) and to isolate BCTs that may contribute to greater intervention efficacy.**Methods:** Multiple databases were searched to identify RCTs that compared at least two technology-based interventions or evaluated the additive effects of technology components on physical activity outcomes. Of 1934 abstracts reviewed, 38 studies (n=91 arms) met eligibility criteria. Two of four independent coders used the 93-item BCT Taxonomy to code all study arms (intercoder reliability ≥0.8) for BCT presence and mode of delivery.**Results:** Across 38 studies, fewer than half of the available BCTs (n=42 of 93; 45.1%) were used. Technology-based intervention arms (n=52) used 12.7 (range: 2–25) unique BCTs on average, while technology-based control arms (n=26) used 6.6 (range: 1–19). The average number of unique BCTs delivered by mode was highest for internet (7.8), followed by mobile (7.0), phone (6.6), human (5.7), email (5.6), wearables (5.4), print (4.5), and social media (3.4). Among all technology arms (n=78; 1248 total BCTs represented), the largest proportion of BCTs delivered were in domain 2 (feedback and monitoring; n=322, 25.8%), domain 1 (goals and planning; n=308, 24.7%), and domain 3 (social support; n=109, 8.7%). Within domains, the proportion of BCTs used varied by mode (domain 1: 45.5% of BCTs delivered by internet, 18.8% email, 14.3% human; domain 2: 34.2% internet, 29.8% wearables, 11.8% email; domain 3: 23.9% social media, 22.0% internet, 21.1% human, 21.1% email). Of 24 studies that compared a single technology-based intervention with a technology-based control group, 10 had positive between-group effects on physical activity. Efficacious interventions used between 2 to 11 (M=6.8) more BCTs than controls; some provided greater doses and/or different delivery modes for the same BCT also represented in control groups.**Conclusions:** The BCT taxonomy is useful for identifying technology-based intervention components that may underlie mechanisms of behavior change. Additional efforts to evaluate BCTs by dose and mode of delivery can further elucidate effective approaches for eHealth interventions.

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DEFINING ADHERENCE TO MOBILE DIETARY SELF-MONITORING AND ASSESSING TRACKING OVER TIME

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Background: Dietary self-monitoring (DSM) methods via mobile devices allow for objective assessment of adherence to DSM and examination of how DSM changes over time; however, the best way to define DSM adherence is not known. The purpose of this study was to use objective mobile DSM data from 2 mobile weight loss studies that used 3 different types of DSM methods to determine the best way to define DSM adherence.

Methods: Overweight adults (n=125; mean BMI 34.6 ± 5.6 kg/m²) with smartphones were enrolled in 1 of 2 remotely-delivered 6-month randomized weight loss interventions: DIETm [n=42 standard app (App) or n=39 wearable Bite Counter device (Bite)] and 2SMART [n=20 App or n=24 photo meal app (Photo)]. All participants received the same behavioral weight loss information via twice weekly podcasts. Participants were assigned to a specific DSM method and were asked to use their assigned method throughout the study. The goal of this study was to identify the best criteria to use for defining adherence to DSM (e.g., number of days tracked, number of meals tracked, the day at which monitoring after that day dropped below 25% and 50% of days monitored, etc.) when predicting weight loss and to examine patterns of DSM usage over the course of two 24-week studies.

Results: Adherence defined as the overall number of days ≥2 meals were logged explained the most variance in weight loss at 6 months (R² = 0.21, F=25, P<0.001) for all study completers combined (n=96). For the App group, the number of days at least 800 kcals were logged explained the most variance (R² = 0.29, F=18.6, P<0.001). For the Bite group, the day at which monitoring after that day dropped below 50% of upcoming days monitored was the best predictor (R² = 0.16, F=5.2, P=0.03). For the Photo group, the total number of meals tracked was the best predictor (R² = 0.26, F=5.9, P<0.001). Overall, regardless of DSM device or method to quantify adherence, DSM declined over time with all methods having fewer than half the sample still tracking after week 10.

Conclusions: With various tracking methods combined, using an adherence measure of the total number of days ≥2 meals were tracked may be the best method to determine adherence to DSM in weight loss studies using mobile tracking methodology. This study shows that DSM rates decline quickly and elucidates potential times for early interventions to stop the reductions in DSM.

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DEVELOPMENT AND PILOT EVALUATION OF AN APP-BASED REFERRAL SERVICE TO SUPPORT ADULT CANCER SURVIVORS INCREASE PHYSICAL ACTIVITY

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Background: Cancer survivors are interested in using technology to help them adopt and maintain healthy lifestyles. However, there are hundreds of apps and websites available and finding a good one can be difficult. This is especially true for mobile phone applications, where recent audits have shown that the most popular apps in app stores lack evidence-based strategies. This study aimed to develop and pilot test a smartphone app referral service designed to assist cancer survivors to increase their physical activity by matching them with high quality existing apps based on their individual characteristics (behavioral goals, phone type, fitness tracker preference, and personality). In particular, the study sought to examine feasibility and acceptability of the service and explore preliminary efficacy for physical activity behaviour change.

Methods: A systematic search was used to identify potentially appropriate iOS and Android smartphone apps. The apps were audited to examine the type of physical activity encouraged and evidence-based behavioural strategies and other characteristics, which could be used to match apps to users' preferences and characteristics. A structured service was also devised to deliver the apps and counselling, comprising two face-to-face appointments with a mid-week phone or email check-up. The app referral service was piloted using a pre-post design among twelve cancer survivors. Participants' feedback regarding the service's feasibility and acceptability was sought via purpose-designed questionnaire, which was analysed using inductive thematic analysis and descriptive statistics. Changes in physical activity was assessed using a valid and reliable self-report tool and analysed using paired t-tests. In line with recommendations for pilot studies, confidence intervals and effect sizes were reported to aid interpretation of clinical significance.

Results: Of 374 apps identified during the systematic search, 54 progressed to the audit (iOS = 27, Android = 27), and 30 were used in the service. The apps consistently scored well for aesthetics, engagement and functionality, and inconsistently for gamification, social and behaviour change features and relevance to survivors. Ten participants completed the pilot evaluation and provided positive feedback regarding the service's acceptability and feasibility. On average, participants increased their moderate-vigorous physical activity by 236 minutes per week (d = 0.73; 95% CI = -49 to 522; p = 0.09).

Conclusion: This study offered initial evidence that a smartphone app referral service for cancer survivors is feasible and acceptable and may increase physical activity levels. Further research is warranted on a larger scale to investigate generalisability, long-term compliance and application in clinical settings.

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DEVELOPMENT OF A THEORY-BASED APP TO PROMOTE GUT HEALTH FOR CELIAC DISEASE: MYHEALTHYGUT

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Aim: The overall goal of this study was to design and pilot test a smartphone app (MyHealthyGut), which was created to promote effective self-management of celiac disease and gut health. The purpose of Part 1 of the study was to gather feedback from end-users (adults with celiac disease) regarding the desired functions and content of an app to manage celiac disease. The purpose of Part 2 of the study was to pilot test the MyHealthyGut app with end-users and health care providers.

Method: One-hundred and eighteen adults diagnosed with celiac disease participated in the initial survey (Part 1). Seven adults with celiac disease engaged in focus groups to provide feedback after testing the MyHealthyGut app for a 1-week period; 7 health care providers (dietitians and physicians) provided online feedback about the app after using it for a 1-week period (Part 2).

Results: Part 1) Cost, ease of use and available functions were the most important perceived factors determining use of an app to manage celiac disease. Over 90% of participants indicated they felt there was a need for an app for celiac disease. End-users wanted content to be supportive and indicated it was important to have the ability to track diet and symptoms, access nutritious gluten-free recipes and foods, cooking tips, evidence-based supplements and safe restaurants. Part 2) Focus group participants suggested revisions to the app pertaining to app content (integrate functions of the app for improved organization and usage), functionality and ease of use (clearly marked way-finding buttons), and to improve several features (symptom journaling, cooking tips). The majority of health care providers reported positive perceptions of the app (5 of 7) and reported similar revisions as the end-users pertaining to content, functionality and ease of use.

Conclusion: Health-related mobile applications make smartphones useful tools in providing point of care to the user. Participants reported a need for the MyHealthyGut app (Part 1) and provided feedback to revise the content, features and functions of the app (Part 2). MyHealthyGut is the first evidence-based user-centred app that may be helpful in empowering users to effectively self-manage celiac disease.

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DEVICE OWNERSHIP, HEALTH APP USE, AND INTEREST IN EHEALTH TECHNOLOGY: AN ANALYSIS OF U.S. ADULTS IN HINTS WITH HIGH BLOOD PRESSURE

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Background: mHealth and eHealth interventions have been used to help people manage chronic conditions like hypertension (HTN), but challenges in access and willingness to use these interventions can be barriers.

Objectives: (1) Describe prevalence of device ownership, health app use, and interest in sharing medical information electronically with providers by sociodemographic status; and (2) evaluate predictors of accessing personal health information online via a secure website or app among people with HTN.

Methods: Data from the 2014 Health Information National Trends Survey (HINTS) 4 Cycle 4 were evaluated (N=3677), of which 1602 people had HTN. This analysis only includes those with HTN. People were asked if they: (1) had a tablet computer, smartphone, or basic cell phone technology only; (2) if they had health-related apps on their smartphone or tablet and if so, did the apps help them: (a) achieve a health-related goal, (b) make a decision about how to treat an illness, or (c) ask a doctor new questions. Interest in exchanging medical information electronically and the number of times they accessed their health information online was also assessed. Chi-square tests assessed differences in observed proportions and multivariate linear regression evaluated predictors of accessing personal health information, controlling for sociodemographic factors, self-rated health, and confidence in data security.

Results: Basic cell phone technology was the most commonly used option for all participants; however, there were significant differences in device ownership by age (P<0.001), gender (P=0.037), and education (P<0.001). Smartphone users were younger and more educated, while tablet users were older. Men were more likely than women to own smartphones and tablets; this trend held true for those with more education. Regarding general health app use, significant differences were observed by age (P=0.023) and race (P=0.045), with those aged 18–34 and 35–49 more likely than adults 50+ to use apps and Blacks (47%) reporting more app use than Whites (38%) and Hispanics (19%). There were no differences in use of health apps designed to help people achieve a goal, make a decision, or ask doctors news questions. Interest in sharing medical information electronically with providers was significant by age (P<0.001) and education (P=0.001), with younger adults and those with a college education showing the most interest. Lastly, people were significantly more likely to access their personal health information online if they were younger, White, more educated, interested in sharing medical information electronically, and confident of data security.

Conclusion: mhealth interventions that use basic cell phone technology can potentially reach a wide cross-section of people with HTN. Apps may be one strategy to provide health information that can be used to increase better management of HTN in Blacks.

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FEASIBILITY OF EVALUATING DIGITAL TOOLS TO PROMOTE FLUID INTAKE IN PATIENTS WITH A HISTORY OF KIDNEY STONES

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The prevalence of kidney stones is rising and stones are associated with an estimated economic burden of \$4 billion annually. Clinical guidelines for preventing recurrence emphasize increasing fluid intake but less than 50% of patients adhere to those guidelines. Emerging digital tools, such as mobile applications (apps), incorporate a number of evidence-based behavior change techniques but the efficacy of these tools is unknown. Using single-group pre-post (AB) design, this study examined the feasibility of using an app to support patients seeking to increase their fluid intake. For 14 days, adults (n=10) who previously experienced a kidney stone provided a first morning urine sample to evaluate electrolyte content, osmolality, and urine specific gravity at the beginning of each day and completed an online survey at the end of each day. On days 6 and 13, participants completed a 24-hr urine collection to evaluate total volume and sodium excretion. On day 7, participants set a goal for fluid intake (1.9 L/day), installed a commercial hydration app on their smartphone, and received training on how to use the app. Measurement completion rates were excellent for end-of-day surveys (94%), beginning-of-day urine samples (99%), and 24-hr urine collections (100%). App use had minimal impact on concentrations of urinary sodium and potassium, osmolality, urine specific gravity, color, or 24-hr collection volume. The most common end-of-day reasons for not drinking enough involved not being thirsty (48%), interference from other tasks (46%), not having water at hand (38%), and not being motivated to drink (30%). Participants reported that the app was easy to use ($M=93/100$) and enjoyable ($M=79/100$). Most reported that the app was likely to help them achieve their goal (60%) and that they would use the app again (60%). Participants reported interest in using connected devices to measure/monitor fluid intake (70%), scheduled prompts/reminders (70%), and self-monitoring tools to track their fluid consumption (70%). None owned a connected water bottle but 90% believed it would help them to achieve their goal. One month later, half of the participants still had the app installed on their smart phone but few continued to use it (20%). Overall, this study demonstrated the feasibility of evaluating digital tools for promoting fluid intake in patients with a history of kidney stones but suggested that a multi-component intervention may be needed to modify clinical outcomes.

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FINANCIAL INCENTIVES FOR PHYSICAL ACTIVITY IN ADULTS: AN UPDATED SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Financial health incentives have grown in popularity due in part to technological advances that have made it easier to track and reward physical activity (e.g., Apple Inc. introduced the Health Kit app in 2014). The purpose of this study was to update the evidence on the effects of financial incentives on physical activity in light of recent transformative technologies.

Methods: A systematic review and meta-analysis was conducted among studies published since the last known review in 2012. Seven databases were searched for randomized controlled trials (RCTs) published in English-language peer-reviewed journals from January 2012 to April 2017. RCTs to increase physical activity in adults with incentives contingent on specific physical activity behaviors (e.g., steps per day) or fitness outcomes (e.g., VO₂max) were included. Two reviewers independently screened titles and abstracts. Included studies were appraised using a standardized data extraction and quality assessment tool. A descriptive analysis of intervention design characteristics was conducted and a random-effects meta-analysis was undertaken for studies reporting average weekly steps per day for intervention and post-intervention periods.

Results: Fourteen studies met the inclusion criteria involving 2,962 participants. Eight of 14 studies incorporated wireless activity trackers and smartphone technology to track and reward physical activity. Compared to controls, incentives exhibited significant, positive effects on physical activity in 10 of 13 studies during the intervention, and 1 of 10 studies at follow-up. Nine studies were included in the meta-analyses involving 1,263 participants. The majority (7 of 9 studies) were of moderate methodological quality, short in duration (8 of 9; 12–16 weeks) and included a follow-up period (8 of 9; 8–24 weeks). The pooled meta-analysis results favored the incentive condition during the intervention period (mean difference (MD): 1,143 steps per day; CI 95%: 777–1510) and at follow-up (MD: 987 steps per day; CI 95%: 246–1727). Statistical variation between studies was low to moderate.

Conclusions: This updated systematic review and meta-analysis found that incentives increased physical activity for interventions of short durations (≤16 weeks) and after incentives were removed. Contrary to what has been previously suggested, a short-term incentive ‘dose’ may promote sustained physical activity post-intervention.

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HEALTH BEHAVIORS AMONG YOUNG ADULTS IN THE AGE OF SOCIAL MEDIA

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Purpose: With the growth of peer-to-peer social media, understanding the role of these social networks in relation to health behaviors is important, particularly among young adults who are developing lifelong health behaviors and may be more susceptible to peer influences, role models or negative self-comparisons. We sought to answer who is more affiliated with social networking and how high affiliation relates to health behaviors and self-evaluations.

Methods: Young adults (18-35yo) enrolled in a healthy body weight clinical trial at two urban universities (n=316; %female=81.3%; %Caucasian=57.0%; M age=22.1 ± 3.9; M BMI=31.3 ± 4.6) completed surveys: Social Media Affiliation (SMA; e.g. “Facebook is part of my daily routine, “I would be sorry if Facebook shut down”); enrollment status (undergraduate vs. graduate student); the International Physical Activity Questionnaire (IPAQ); the Population Assessment on Tobacco and Health (PATH) questions; the Body Image Quality of Life Inventory; Perceived Stress Scale; and MOS Sleep Scale.

Results: There were differences in SMA by demographics: undergraduate ($p < .05$) and white ($p < .01$) students were more likely to report high affiliation. No differences in SMA were found by sex nor age. Among the full sample, 37.4% met criteria for MVPA, 62.3% reported never smoking cigarettes, 83.2% reported never using e-cigarettes, and 26.2% reported at least 8 hours of sleep per night. In terms of self-evaluation, 52.4% reported high levels of stress and 73% reported low body image. Level of SMA (high vs. low) was not associated with the health behaviors or self-evaluation measures.

Conclusions: Despite differences in SMA by enrollment status and race, there were no differences in health behaviors nor negative self-evaluation by SMA. Given the lack of association between SMA and negative health behaviors/self evaluations, these data provide preliminary evidence to mitigate concerns regarding use of these intervention channels for improving health. Implications of these findings will be discussed, such as: 1) social norms and the role of social networking by life stage and/or peer group; and 2) how future interventions can leverage information on SMA, demographics, and/or type of social networking platform to optimize success.

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HEALTH TECHNOLOGY USE AMONG UNDERGRADUATE STUDENTS: A PILOT INVESTIGATION

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Due to the many environmental changes, undergraduate education has been acknowledged as a critical period for promoting healthy behaviors and preventing unhealthy behaviors. The transition to independence and adopting more responsibility can make undergraduate students (UGS) vulnerable to developing unhealthy habits such as poor diet, lack of sleep, and reduced physical activity (PA). Many UGS do not meet health behavior guidelines. However, the use of mobile apps may assist in monitoring daily lifestyle choices and can provide informed recommendations that promote better health. Research has found that 65.8% of UGS owned a smart phone and 17% reported downloading a health application. The aim of the present study is to explore the relation between health behaviors (i.e. sleep, eating, and PA) and the use of health technology (HT) among UGS.

Demographic information, health behaviors and use of HT were assessed using an online survey. Forty-five UGS participated in this pilot study. Frequency distributions and descriptive statistics revealed that 100% of the sample own a smart phone. Forty-six percent of UGS (N=21) use health devices (e.g. Fitbit) and 71% (N=32) use health apps. Among UGS who use health devices, 43% use Fitbit and 24% use Apple Watch. The type of health app that UGS reported using most was MyFitnessPal (31%), Fitbit App (31%), Nike+ Training Club (25%) and the iPhone Health App (19%). Females (85%) were more likely than males (61%) to use health apps; whereas, males (38%) were more likely than females (24%) to use health devices. UGS reported PA, diet/calorie-counting, weight loss and sleep to be the most common reasons for using health technology. On average, 48% of UGS using devices spent over \$100 on HT and 69% of app users obtained them for free. Fifty percent of UGS who use health apps engage in purposeful PA; whereas, 87% of UGS using health devices engage in purposeful PA. Further data collection can reveal additional patterns in health behaviors and HT use. By understanding the extent to which HT promotes healthy behaviors in UGS like sleep, PA and eating, interventions can be created or adapted to include effective apps or devices.

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HEALTHY MOM2B: BASELINE FEATURES OF PREGNANT WOMEN PARTICIPATING IN A MOBILE HEALTH STUDY TARGETING GESTATIONAL WEIGHT GAIN

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INTRODUCTION: Almost one-half of all pregnant women in the U.S. exceed the Institute of Medicine's (IOM) gestational weight gain (GWG) guidelines. The Healthy Motivations for Moms-to-Be (HM2B) Study is a randomized mobile health intervention for pregnant women living in the U.S. The intervention condition received targeted GWG goals and evidence-based behavioral strategies to encourage healthy GWG, while the comparison condition received content related to stress management techniques to reduce overall stress levels during pregnancy. The purpose of this study was to examine the baseline demographic, anthropometric, weight-related behaviors, and perceived stress of women enrolled in HM2B.

METHODS: Using Facebook and Twitter social media sites for recruitment, women who were in early pregnancy (less than 20 weeks), living in the U.S., and owned a smartphone and bathroom scale were recruited to participate in HM2B. Participants (n=142) completed an online self-report baseline survey that included adapted questions from the Rapid Eating Assessment for Participants (REAP), Godin Leisure Time Exercise Questionnaire, and the Perceived Stress Scale (PSS). Descriptive statistics were used to summarize the data.

RESULTS: The HM2B sample was predominately White (80.3%, n=114), followed by African American (10.5%, n=15) and Asian (9.2%, n=13). The mean age of participants was 29.7 ± 3.5 years. Pre-pregnancy Body Mass Index (BMI) was calculated from self-reported height and weight. Results indicated that 44.3% (n=63) were normal weight and 55.7% (n=79) were overweight or obese. Mean gestational age at enrollment was 13.9 ± 4.1 weeks. Of the 142 pregnant women, 56.3% (n=80) of participants were primigravida, 84.5% (n=120) were married, 75.4% (n=107) had at least a Bachelor's degree, and 61.3% (n=87) were employed for wages full time. Eating behaviors varied, but most participants reported eating less than 2 servings of fruits (52.8%, n=75) and 2 serving of vegetables (53.5%, n=76) a day. Regarding exercise behaviors, 47.9% (n=68) reported use of a physical activity (PA) tracker. On average, participants reported engaging in moderate PA 2 days per week and an average of 6.41 ± 0.52 hours of sedentary activity per day. Perceived stress levels were low among all participants (mean PSS score= 4.8 ± 2.7 points out of 16). There were no significant differences in baseline measures by intervention conditions (P 's>0.05).

DISCUSSION: Overall, dietary and PA behaviors were below recommendations, and perceived stress levels were low at baseline, indicating that among this sample, targeting healthy eating and PA may be more important than stress reduction. The HM2B Study provided participants with group-based health behavior goals and tracking features related to healthy eating, exercise, weight, and stress management. Future analyses will examine the role of HM2B on GWG.

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MI SALUD, MI VIDA: A SELF-DISCOVERY TOOL FOR BREAST CANCER SURVIVORS

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Breast cancer survivors are at risk for weight gain, obesity, and diabetes. Relative to non-Hispanic whites (NHW), Latinas have a higher risk of developing these sequelae. Self-management strategies leading to weight loss have been associated with reduced risk of morbidity and mortality. Although a broad selection of health and cancer-related mobile applications (apps) designed to promote a healthy lifestyle exist, few are evidence based, and none are designed to promote self-discovery.

Purpose: To assess the feasibility and acceptability of *Mi Salud, Mi Vida*, a mobile phone application that extends self-monitoring to provide personalized information to promote self-discovery. That is, it prompts women to realize their own personal preferences and to discover health behaviors that work best for them in order to maximize the potential for women to lose weight and incorporate a healthy lifestyle into their daily life.

Methods: Thirty-seven breast cancer survivors (19 Latinas and 18 NHW) participated in the 12-week intervention. Women were randomized to receive either a self-monitoring only app or the app with both self-monitoring and personalized feedback for self-discovery. BMI, self-report measures of diet and physical activity, and mood were collected at baseline, 6-week, and 12-weeks.

Results: The mean age of participants was 51.2. Overall, 14% of women reported being a very sophisticated technology user; NHW participants were more likely to report being a very sophisticated technology user than Latinas (22% v. 5%), although this difference reached trend level significance $p = 0.10$. In addition, there was a trend showing that NHW had a higher percentage of days with app usage than Latinas (57% v. 40%, $p = 0.10$). Common participant discoveries were related to connections between mood, a healthy lifestyle, and the social environment. For example, women reported: "I feel like when I am happy that I eat like a healthy woman...And when I am sad I keep on eating more." "I think I tend to eat less when I eat by myself, and with others I eat a lot more." Positive feedback on the app included user-friendliness and the large variety of food and exercise choices.

Discussion: Findings suggest that Latina and NHW breast cancer survivors are interested in using mobile apps to gain insight into their own health behaviors around weight loss. Implications for tailoring health behavior change apps to breast cancer survivors, particularly Latinas, will be discussed.

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PATIENT PORTAL USE AMONG OLDER ADULTS: WHAT IS REALLY HAPPENING NATIONWIDE?

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Patient portals (PPs), secure websites that allow patients to access their electronic health records (EHRs) and other health tools such as eMessages and prescription refills, can be beneficial to older adults managing multiple chronic conditions (MCCs) and their caregivers. With their high prevalence of MCCs, older adults could be a major PP user group. However, prior studies have highlighted a lack of PP use in older adults and usability issues. Little is known about how older adults in the community are using PPs and what specific challenges they encounter. The aim of this study was to examine the current state of PP use in older adults, using selected baseline data from an ongoing nationwide online trial. The dataset includes quantitative and qualitative data from 272 older adults (mean age, 70.0 ± 8.5 years) with chronic conditions. The majority of participants ($n=194$, 71.3%) had at least one PP account, and 51.5% ($n=100$) had two or more PP accounts (range, 1–6). Many participants expressed frustration with juggling multiple PPs. The types of PPs varied widely, including at least 38 different PPs from hospitals, outpatient clinics, insurance payors, Medicare, pharmacies, and labs. Half of participants ($n=96$, 49.5%) learned to use PPs via information on PP websites, and 35.1% ($n=68$) learned via brochures. A total of 170 participants provided written comments about their experiences with PP education, including “no training/self-taught” ($n=55$) and “minimal information” ($n=23$). Overall, the level of perceived PP usability was low (mean, 28.7; range: 6–42). Regarding barriers to PP use, log-in problems generated the highest number ($n=26$) of comments. About half of participants ranked the ability to view lab results ($n=63$, 32%) and communicate with healthcare team members ($n=41$, 21.1%) as the most frequently used PP functions. Overall, the study findings suggest that many older adults have multiple PP accounts and are using them. PP usage, however, is limited due to several challenges associated with PP technology combined with a lack of training support. There has been a rapid growth in the number of older adult online, and PPs can be a robust tool to engage these individuals in their own care. To do so, PPs must be easily manageable by older adults and sufficient training must be provided. Further studies with different groups of older adults will provide additional information to develop more usable PPs for older adults.

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PINPOINT: GAMING TECHNOLOGY TO ENGAGE ADOLESCENT SICKLE CELL PATIENTS IN PRECISION PAIN MANAGEMENT

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Sickle cell disease (SCD) is the most common inherited blood disorder in the U.S., and affects primarily African Americans and Hispanics. Approximately, 1,000 U.S. children are born with SCD annually. SCD complications can be serious and have a significant impact upon well-being and quality of life. Pain is the hallmark symptom associated with SCD, and is the primary cause of SCD-related hospital admissions. Accurate assessment of pain specifiers (type, frequency, and intensity of pain) can help with ameliorating pain quickly and effectively. Reducing barriers to collection and promoting the value of accurate SCD pain assessment is a need in pediatric medicine. The interactive games for health literature among youths has shown video games can improve self-efficacy; stimulate health discussions with friends, family and clinical team; encourage seeking support and advice; and can emphasize behavior acquisition via experiential learning. Interactive games can provide information about causes, treatments, and self-care options, and can improve self-care and reduced emergency clinical utilization. Pinpoint: Gaming technology to engage adolescent sickle cell patients in precision pain management was a Small Business Innovation Research (SBIR) Phase I project that examined the feasibility and acceptability of a gamified tablet application intended to encourage teens (aged 13–17) to assess and talk about their SCD pain. The prototype consisted of a Pain Assessment Tool, vocabulary game, body scanner reflection, educational self-disclosure activity, and excerpts from the *Hope and Destiny Jr.* book by Hsu, Rodrigues, and Brandalise (2013). Healthcare providers were interviewed on the app's acceptability and potential function within the clinical practice ($n=4$). Teens participated in cognitive interviews, focus groups, and usability testing ($n=16$). Of these participants, the average age was 14.5 + 1.3 years, 33.75% were female, and 50% were diagnosed with Hemoglobin SS (Hb SS), the most common form of SCD. The System Usability Scale (SUS), a validated tool for assessing the usability and acceptability of technological products, served as the primary outcome. The preliminary SUS score ($n=5$) was 82.5 (68 is “above average”), suggesting a high level of acceptability and usability among users; usability testing is ongoing. Final project outcomes and the development of the full Pinpoint app will be discussed.

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SYSTEMATIC REVIEW OF SOCIAL MEDIA AS A RESEARCH TOOL FOR DIET AND WEIGHT LOSS

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Social media use has become widespread over the past several years and may be a rich data source and intervention tool for diet and weight loss research. Despite increasing interest in social media research, no systematic review has synthesized the literature on how social media is used as a research tool for diet and weight loss. This systematic review examined the following research questions: 1) How is social media being used as a research tool for diet and weight loss? 2) What methodologies are used in diet for weight loss studies that use social media as a research tool? 3) What research gaps exist among diet for weight loss studies that use social media as a research tool? To answer these questions, we conducted a systematic review of studies related to diet, weight loss, and social media. Articles were included if they used at least one of the specified social media platforms (Instagram, Twitter, Pinterest, Tumblr, Vine, Flickr, Myspace, Facebook, or blogs); had empirical, original research; were written in English; and published after 2003. After duplicates were removed, 2202 unique articles were screened for inclusion, and 39 met inclusion criteria. Most articles focused exclusively on Twitter (33%, n=13) and Facebook (33%, n=13). The next most studied platform was Instagram (15%, n=6), followed by blogs (8%, n=3), Pinterest (3%, n=1), and YouTube (3%, n=1). Two studies (5%) focused on multiple social media platforms. Most studies were descriptive (62%, n=24) and the rest were intervention studies (38%, n=15). Of the 19 studies that analyzed content from social media posts, 74% analyzed text (n=14) and 16% (n=5) analyzed images. Intervention studies most often used social media platforms to enhance social support for individuals trying to lose weight, to study engagement with study content and how engagement is related to weight loss, and as a tool to deliver educational materials and facilitate weight loss-related behavior change. Descriptive studies used social media (particularly Twitter and Instagram) for surveillance of things like prevalence of obesity and presence of food deserts and swamps. These findings suggest the need for more studies that analyze photo-based social media platforms such as Pinterest and Instagram. In addition, since many of the experimental studies were feasibility studies with small sample sizes, larger social media-based diet/weight loss intervention studies should be conducted.

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USING DUAL PROCESS THEORY TO DETERMINE EFFECTIVE MESSAGING TO SUPPORT ADHERENCE TO A TIME RESTRICTED DIET

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Self-monitoring is one of the most beneficial intervention strategies to support adherence to a diet. Typically, self-monitoring during a dietary intervention involves searching a food database, selecting a portion size, and sometimes the time or meal for which food was consumed. This action is considered to be burdensome and biased. While using smartphone applications has eased the burden, issues persist, leading researchers to develop strategies to improve completeness and accuracy of dietary self-monitoring. Self-monitoring, in its typical form engages an effortful cognitive process that is vulnerable to disruption. We proposed two competing strategies to improve adherence to the diet by considering both “type 1” and “type 2” processes of the dual process model. To engage a type 1, automatic process, we proposed an intervention designed to trigger a behavior via a cue or stimulus. To engage a type 2, cognitive process, we proposed an intervention designed to positively reinforce the desired behavior by showing performance feedback. We conducted a 2x2 experiment that randomized 40 female participants in a time-restricted diet trial for 6 months. Participants were all asked to adhere to a 10 hour window of eating and randomized to receive cue messages, reinforcing feedback, both, or neither on a smartwatch. Participants receiving cues were sent a message indicating when it was time to eat and when it was within one hour of the time to stop eating. Participants receiving reinforcing feedback were shown their overall adherence percentage to the time window when they indicated an eating episode had occurred. We hypothesized that participants receiving both types of support would show greatest adherence to the time restricted diet. 42 healthy women with a BMI between 25 and 40 (M=32.68, SD= 4.43) and between 18 and 65 years of age (M=48.04, SD=11.10) were recruited. A two way ANOVA with 2 levels of cues (yes, no) and 2 levels of reinforcement (yes, no) predicting adherence to the diet was conducted. The main effect of reinforcement demonstrated a significant effect, $F(1, 34) = 5.442$, $p=0.026$, such that adherence was higher in those receiving reinforcement. The main effect of cues and the interaction effect were non-significant. These results did not confirm that supporting dietary adherence using both cues and reinforcing feedback was necessary. It seems reasonable that participants were most supported by reinforcement, or a type 2 process, while the individual was making a significant behavioral change. It is possible that once the new behavior becomes more habitual that a type 1 message could be most helpful. Future work will investigate whether matching the type of support provided is best delivered dependent on whether the behavior is newly initiated or established. Wearable sensors that provide data on the dynamic nature of behavior change could further inform this work.

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USING MOBILE APPS TO PROMOTE PRESCHOOLERS' PHYSICAL ACTIVITY: PERSPECTIVES OF PARENTS AND CHILDCARE CENTER DIRECTORS

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Background: The American Academy of Pediatrics recommends limiting preschoolers' daily screen-time to 1 hour of educational material, given the association of screen-time with risk for obesity and lower levels of physical activity. Considering the high prevalence of screen-time among both parents and children, mobile applications (apps) may be a useful way to disseminate educational information and support for healthy behaviors. The purpose of this study was to identify parents' and childcare center directors' perspectives on using mobile apps to promote preschoolers' physical activity.

Methods: Four focus groups of 28 participants, including 20 parents of preschoolers and 8 childcare center directors, were facilitated to identify familiarity and usage of mobile apps, ways an app may help preschool children become more physically active, desired features related to content/look/usability, desired frequency of prompts/reminders, and ways to tailor the app to the user. Conversations were recorded and transcribed, and NVivo was used to identify themes.

Results: Participants reported currently using mobile apps as a tool for both educating and entertaining preschool-aged children. While most focus group members voiced concern over children's amount of screen-time, both parents and directors expressed a sense of responsibility to put quality content in front of young children and use technology to teach healthy habits. Respondents in all focus groups stated that they want to learn more about how to help children be more physically active including local community resources, indoor play areas, and play groups. Most, but not all, participants were open to a smartphone app delivering this education. Parents expressed interest in receiving educational content through videos and reminder notifications including motivational messages, which would aid them in delivering better and more consistent physical activity education to their children.

Conclusion: Parents and childcare center directors were concerned about children's screen-time but were receptive to using an educational mobile app designed to help parents teach their preschoolers about physical activity.

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MERITORIOUS AWARD WINNER

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USING THE COMPUTERIZED HEALTH SURVEY TO IMPROVE BEHAVIORAL HEALTH SERVICES IN THE ED

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The Computerized Health Survey (CHS) is a patient-administered electronic survey designed to screen for mental health (MH) and substance use disorders (SUD) and provide referral resources based on appropriate level of care needed by the patient and their readiness to change. Patients take the CHS on tablet PCs installed in treatment rooms. The CHS was created to reduce clinician burden of screening patients for common behavioral health problems and improve patient care. The CHS uses well-known, brief validated screeners to identify MH (ie, PHQ-2, GAD-2, PC-PTSD) and SUD (eg, US AUDIT 1–3) within an average of 4 minutes. The assessment portion with the remaining validated items will open for each screener section a patient is positive. The entire survey takes roughly 15 minutes to complete if a patient has multiple MH and SUD behaviors. If the patient screens positive, an email alert is sent to hospital behavioral health staff (BHS). BHS then administers a brief intervention and provides referral to treatment and resources if needed. When appropriate, BHS conduct follow-up calls within the week after ED discharge.

Since May 2017, 932 patients have been prompted by hospital staff to take the CHS. Three hundred eighty-six patients (41.4%) did not complete for reasons expected in an ED setting including: disinterest, too ill/medical interventions, language barriers, visual, and auditory impairments/disabilities, technological deficits, illiteracy, and discharged during interaction. Of the 546 (58.6%) patients who completed the CHS, 198 (36.3%) screened positive and had an alert sent to BHS. BHS approached 135 (68.2%) of these patients, with 98 (72.6%) receiving brief intervention, 85 (86.7%) receiving referral to treatment and/or resources, and 20 (23.6%) receiving follow-up calls.

Integrating CHS into the ED improved BHS workflow. It reduced time spent screening and increased time spent on intervention and referral. Since implementing CHS, the typical BHS 30–45 minute screening, brief intervention and referral to treatment has become 20–25 minutes of brief intervention and referral to treatment. This more focused approach led to BHS seeing more patients per shift. CHS eliminates the BHS time spent screening a patient with no target behavior, while validating the patient has little to no risky behavior. The CHS continues to screen more patients daily and will continue to improve BHS workflow and assist in providing better care for patients.

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CONSIDERING POLICIES FOR PANTRIES: DETERMINING REACH OF NUTRITION POLICIES AT FOOD PANTRIES ACROSS THE UNITED STATES

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Food insecurity (FI) is the lack of access to enough food to live an active healthy life. Current efforts to address FI include developing and implementing policies, programs, and practices at the federal, state, and local level. Many food banks and pantries have made efforts to improve the nutritional quality of the foods they offer. However, food pantries have limited resources and may lack the knowledge to develop policies to improve the quality of food offered. There is limited information available to determine the potential impact on the nutritional quality of foods distributed if pantries adopt specific policies to guide donations and distribution. This study used the RE-AIM framework to determine the reach of nutrition policies at the food pantry level. Reach was calculated to determine the number and overall proportion of food pantries that had a formal written nutrition policy, an informal nutrition policy, or no nutrition policy. A cross-sectional survey was developed and distributed to geographically representative sample of U.S. based food pantries (N=5220). Chi-squares tested for significant differences in demographics and location of food pantries with a formal nutrition policy and those without. N=819 pantries completed the survey and only 18% reported a formal, written policy to guide food donation or distribution. Sixty-five percent reported informal nutrition policies. Barriers identified by the food pantries to having a nutrition policy included: limited ability to get more healthful foods from other donors and food sources (e.g. food drives, retailers), costs to purchase more healthful foods, and limited/no ability to store more healthful foods. There were no significant differences between types of pantries that had a written formal policy and those that did not ($X^2=0.269$, $p=0.604$). The reach of formal, written nutrition policies at food pantries is limited. Many pantries reported informal nutrition policies, however past studies have shown that strong written language in policies improve implementation and adherence. This study adds to the very limited literature on food pantries and a strength is the large sample size of food pantries, geographically dispersed throughout the U.S., which can help inform future efforts targeting food pantries.

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A TALE OF TWO CITIES: EARLIER, MORE COMPREHENSIVE SEXUAL EDUCATION LINKED WITH REDUCTION IN RISKY SEXUAL BEHAVIORS

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Preliminary research suggests that sexual education reduces sexual risk-taking behaviors, but considerable variation exists in the approaches that local governments take to provide sexual education to high school students. As such, inconsistent and non-optimal (i.e. limited) sexual education could lead to problematic health behaviors in high school students. Potential examples of non-optimal sexual education include: abstinence-only sexual education, late exposure to sexual education, and low frequency of exposure. However, at this time, little research has compared the behavioral impact of differing local sexual education policies. Cities like New York City have mandated comprehensive sexual education policy for every year of middle and high school (sixth through twelfth grades) on the premise that it will optimally inhibit high-risk sexual behaviors. By contrast, the county of Miami-Dade, Florida mandates a "one half-credit" course, required for high school graduation, which teaches only HIV/STD education and abstinence, which reduces the burden of more comprehensive education, but may increase the risk of sexual risk behavior. It is possible that high schoolers exposed to earlier, more comprehensive sexual education (e.g., in the case of New York City) partake in fewer sexual risk behaviors than high schoolers who are given a more delayed, abstinence-focused sex education (i.e. from Miami-Dade). This study seeks to compare the behavioral impact of these different sexual education policies at a city-wide level. The present analysis examines public data from the Youth Risk Behavior Surveillance System (YRBSS), exploring a variety of risky sexual behaviors in high school students. In order to isolate the effects of two substantively different sexual education approaches on risky sexual behavior, we compared risky sexual behavior outcomes between New York and Miami. These two cities were selected due to their match on key demographic distributions. Specific behaviors of interest were risky contraceptive methods (i.e., not using birth control) and pre-adolescent (under the age of 13) intercourse. No significant difference was observed in race distribution between the cities ($p = 0.752$). New York City had significantly lower rates of risky contraceptive behaviors (8.80%) compared to Miami (11.87%; $p < .001$), as well as significantly lower rates of pre-adolescent intercourse (8.22% and 10.00%, respectively; $p < .001$). A Bonferroni correction was used on all analyses. These results suggest that in demographically similar metropolitan areas, local policy that mandates a comprehensive approach to sexual education from an earlier age is associated with reduced risk of high schoolers participating in risky sexual behaviors. These findings suggest the need for a greater push for mandated comprehensive sexual education in local governments.

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CONSUMER KNOWLEDGE, TRUST, AND PERCEIVED SAFETY REGARDING GOVERNMENT REGULATIONS OF TOBACCO, E-CIGARETTES, AND RX DRUGS

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Many consumers do not fully understand the government's role in regulating health-related products and advertising. The current study explored beliefs about government regulation and perceptions of trust and safety for tobacco products, e-cigarettes (EC), and prescription (Rx) drugs. We investigated whether perceptions changed over a time when two events transpired: A shift in presidential administrations, and the start of new FDA regulations of EC, allowing for a natural experiment to test the effect of shifts in policy on perceptions of government regulations.

A national panel of consumers completed an online survey; N=1006 in 2015, and N=1003 in 2017. There was a significant increase in awareness of government regulation of manufacturing standards ($\chi^2=65.3$) and approval of new EC products ($\chi^2=35.6$). 2017 respondents were also more likely to incorrectly believe that the government regulates the advertising of EC ($\chi^2=26.1$). Respondents trusted tobacco products ($\chi^2=9.3$), tobacco ad content ($\chi^2=15.2$), EC products ($\chi^2=13.6$), and EC ad content ($\chi^2=20.8$) if they were regulated more in 2017 than in 2015. 2017 respondents felt safer about EC ($\chi^2=18.9$), EC ads ($\chi^2=13.4$), tobacco ($\chi^2=18.6$), and tobacco ads ($\chi^2=9.9$) if regulated by the government than 2015 respondents ($ps < .01$).

After merging both waves, multivariate logistic regression analyses estimated adjusted odds ratios of binary knowledge, trust, and safety perceptions by wave, political orientation, and smoker status. Liberals were more likely than conservatives to know that the government regulates online (AOR=1.3) and TV (AOR=1.5) Rx ads. However, liberals were more likely to trust EC (AOR=1.8), EC ads (AOR=1.7), tobacco products (AOR=1.5), tobacco ads (AOR=1.7), TV (AOR=1.8) and online (AOR=1.6) Rx ads if regulated by the government ($ps < .03$). Liberals were more likely than conservatives to think that EC (AOR=1.6) and tobacco (AOR=1.6) are safer if regulated by the government ($ps < .001$). Smokers were more likely than non-smokers to report that tobacco (AOR=2.1) and EC (AOR=3.5) are regulated. However, smokers were also more likely to trust tobacco (AOR=2.1) and EC (AOR=2.4) and perceive them as more safe (both AOR = 1.2) if regulated (all $ps < .001$).

A knowledge gap remains regarding government regulations. Further, particularly among liberals and smokers, increased belief that products are regulated is coupled with greater trust in perceived regulations – leading to a potential false sense of security.

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DISPARITIES IN RURAL ACCESS TO THE NATIONAL DIABETES PREVENTION PROGRAM FOR OBESITY TREATMENT

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Introduction: The higher prevalence of obesity in rural communities serves as a major driver of urban/rural health disparities, yet rural communities have fewer resources that promote weight management. In 2009, the U.S. Congress approved funding for the Centers for Disease Control and Prevention (CDC) to partner with YMCAs and local health care agencies to broadly disseminate the Diabetes Prevention Program (DPP) for obesity treatment. The current study examined the dissemination of the CDC's National Diabetes Prevention Program (DPP) to assess its impact on the availability of empirically-based obesity treatment services in urban and rural counties across the U.S.

Methods: Names and locations of national DPP community partnership sites were collected from the CDC and cross-referenced with the 2010 Census classification of counties as rural versus urban. The total number of rural and urban counties with YMCA and other CDC-designated National DPP partnership sites was tallied in order to assess the proportion of counties with access to the DPP. A two-tailed chi-square test was utilized to determine whether overall access to the DPP differed between rural and urban counties.

Results: Among the 3,140 counties in the U.S., 1,889 were designated as urban and 1,251 as rural according to the U.S. Census Bureau's 2010 database. Nationwide, 488 urban counties (39.0%) had access to sites offering National DPP obesity treatment services compared with just 141 rural counties (11.3%), $\chi^2(1) = 332.2, p < .001$.

Discussion: Decreasing rural health disparities and promoting equitable access to preventive health services, including lifestyle treatments for obesity, remains a high public health priority of the CDC. However, the data from this study suggest that, while the National DPP has provided greater availability of obesity treatment in the U.S., its implementation may have unintentionally increased rural-urban disparities in access to weight management services by disproportionately increasing access primarily in urban counties. Thus, the development of alternative approaches to increasing access to obesity treatment in rural counties remains an important need—one that may require greater resources directed specifically to rural communities.

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HEALTH-RELATED PRACTICES OF URBAN MIGRANT WORKERS IN METRO MANILA: DETERMINANTS AND OUTCOMES

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The rapid urbanization in developing countries presents new opportunities and challenges especially to migrants who face multiple health vulnerabilities. This cross-sectional study aims to describe the health-related practices of urban migrant workers in Metro Manila and their associated personal characteristics. It also ascertains the correlation of their health condition with related practices and work performance level. Filipino migrant workers (n=119) were mainly selected from peri-urban areas of Bulacan, Cavite, and Rizal through purposive sampling. Main inclusion criteria were (1) working regularly in Metro Manila and (2) living outside Metro Manila or returning weekly to place of origin. The mean age of the respondents is 25 (SD=3) ranging from 18 to 41 years. Majority were males (57%), not married (93%), college-educated (79%), white-collar workers (58%), living with family (76%), and earning median monthly income of 16 000 PHP (~320 USD). A 53-item self-administered survey questionnaire was developed and distributed for a period of two weeks in October 2016. The primary outcome was score rating on a five-point Likert scale indicating frequency of engagement. Cramer's V and Spearman's rank correlation coefficient (rs) were utilized in the analysis of data. Education and occupation are major determinants of health-related practices among urban migrant workers in Metro Manila. Sleep tends to have the most impact on health while interpersonal relationships affect work performance. Healthy migrant hypothesis appears true for this population and the results can be attributed to resiliency, family-oriented values, and importance of harmonious relationships in Filipino culture. The findings of this study can be used in developing migrant-sensitive health system in cities and further inquiry in this emerging research field.

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WHAT DO PATIENTS SAY ABOUT PHYSICIANS AND HOSPITALS ONLINE? A SYSTEMATIC REVIEW OF STUDIES ON ONLINE RATINGS AND COMMENTS

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OBJECTIVE: More and more people have used online reviews to share their medical experiences and choose healthcare providers. These online reviews reveal patients' direct experiences of healthcare providers and can serve as an indicator of the quality of care and patient-physician relationship. This study aims to systematically review studies on patients' online reviews, summarize the major findings and study characteristics, identify literature gaps, and make recommendations for future research.

METHODS: Major databases were searched in August 2017. Inclusion criteria for studies were: 1) focused on patients' online reviews of physicians and hospitals, 2) used qualitative or quantitative methods to analyze patients' online review and reported the outcomes, and 3) peer-reviewed publications. Exclusion criteria were: 1) not focused on patients' online reviews, 2) did not report outcomes of analysis, and 3) review study, commentary, or editorial.

RESULTS: A total of 40 studies that met the above criteria were included in the review. Most (n=23) were conducted for either the U.S. or specific areas within the U.S. Earlier studies (published before 2010) used content analysis and were limited to small sample sizes. More recent studies retrieved and analyzed larger datasets using machine learning technologies such as natural language processing. The number of ratings or reviews ranged from less than 200 to over 700,000. The most studied websites were RateMD, Yelp, Google, HealthGrades, and Vitals. Out of 40 studies, 9 were focused on hospitals and the remaining were focused on physicians, and mostly specialists such as orthopedists or OB/GYNs. Most studies indicated patients' online reviews of their providers were favorable. While all studies were descriptive, some studies compared patient online ratings with traditional surveys and found a high degree of correlation; some compared patient ratings with clinical outcomes and found low-level of correlation.

CONCLUSIONS: Online patient reviews contain valuable information that can generate insights on quality of care and patient-provider relationship, but have not been systematically used for studies of provider quality. With advancement of machine learning and data analysis tools, we anticipate more research on online patients' reviews based on testable hypotheses and rigorous analytic methods.

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CULTURAL ENGAGEMENT AS A HEALTH BEHAVIOUR: LONGITUDINAL ASSOCIATIONS WITH MENTAL HEALTH AND WELLBEING IN OLDER AGE

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Introduction and Purpose: 1 in 4 older adults in the UK is affected by depression, which is associated with a range of physical health outcomes. So there is a recognised need to identify behavioural interventions that can support mental health and wellbeing in older age. There is a large body of literature linking *participatory* arts and cultural engagement with mental health and wellbeing. However, there is much less research into the effects of *receptive* cultural engagement (such as visiting museums, galleries, the theatre and concerts) and mental health. Given that these cultural sites engage people in meaningful activities and help them to form relationships (both of which are protective factors for mental health), it is possible they are being underutilised as sites for public health interventions. Consequently, this study explored whether receptive cultural engagement in older age is associated with better mental health and wellbeing.

Methods: This study used data from the English Longitudinal Study of Ageing assessed between 2004/5 and 2014/15. We selected individuals who had no indication of depression at baseline using the Centre for Epidemiologic Studies Depression Scale (CES-D) and used logistic regression models to explore the odds of developing depression over the following 10 years in relation to how often people visited museums/galleries or attended the theatre/concerts. We also used OLS regression models to explore associations between cultural engagement and changes in wellbeing across the 10 year period using CASP-15. For all analyses, we controlled for all identified demographic confounders, health confounders (including sensory impairment, chronic conditions and pain) and social confounders (including other forms of social/civic engagement).

Results: Independent of confounders, visiting museums/galleries every few months or more was associated with a lower risk of developing depression over the following 10 years (OR=0.50 SE=0.11, CI 0.32–0.78). However, results for attending the theatre/concerts were attenuated when considering social confounders. Both attending museums/galleries and attending the theatre/concerts once or twice a year or more were associated with higher wellbeing 10 years later (B=1.10, SE=0.37, CI 0.37–1.83 & B=0.86, SE=0.37, CI 0.14–1.58). Sensitivity analyses confirmed effects were unaffected by considerations of mobility, attrition or pre-clinical symptoms of baseline depression.

Conclusions: In light of the results presented here, it is suggested that further behavioural intervention studies are designed to test further whether cultural engagement can decrease the risk of developing mental health conditions and improve quality of life in older adults.

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MINDFULNESS-BASED STRESS REDUCTION AND TRAIT HOSTILITY AMONG OLDER INDIVIDUALS AT RISK FOR CAD: A PILOT RCT

Louisia Starnino, BSc¹, Christina Gentile, B.A.², Gilles Dupuis, Ph.D.³, Bianca D'Antono, PhD⁴¹Montreal Heart Institute, Vaudreuil, PQ, Canada; ²Montreal Heart Institute, Saint-Laurent, PQ, Canada; ³Université du Québec à Montréal, Montréal, PQ, Canada; ⁴Research Centre, Montreal Heart Institute/Université de Montréal, Montreal, PQ, Canada**Background:** Hostility and stress increase risk for coronary artery disease (CAD). Mindfulness-Based Stress Reduction (MBSR) has been shown to improve stress and other psychological outcomes in diabetes mellitus and hypertension. Research on its effects on hostility in individuals at risk for CAD is scant.**Objectives:** To examine whether trait hostility among older individuals at greater risk for CAD would decrease following MBSR.**Methods:** 19 men and women ($M_{age} = 67.20 \pm 7.70$) with current or past metabolic syndrome and non-normative physiological responses to stress were randomized to a 9-week MBSR program or to a wait-list control group (WLC). Participants were evaluated immediately pre- and post-MBSR, as well as 2 months later. Hostility was measured using the 39-item Cook-Medley Hostility Scale (CMHo-S). Between-group comparisons were performed on post-pre change scores using t-tests, while repeated measures ANOVA (pre-, post-, 2-months after MBSR) were used for within-group comparisons. Given the sample size, the focus was on effect sizes (ES) rather than statistical significance.**Results:** Between-group analyses showed a slight 1.7% decrease in hostility post-intervention following MBSR in contrast to the WLC group who displayed a 10.8% increase ($d=0.45$, medium ES). An increase in hostility was observed across most subscales for WLCs ($d=0.10$ to 1.12) over the first two evaluations. Repeated measures analyses revealed a continuous decline (4.8–14.7%) in CMHo-S from pre-MBSR to 4 and 8 weeks post-intervention ($p=0.22$; $d=0.93$). Decreases were observed for the cynicism and aggressive responding subscales in particular ($d=0.27$ and 0.87 , respectively). Change in hostility correlated with minutes of practice/week ($r=-0.45$ $p=0.11$).**Conclusion:** This randomized-controlled pilot study provides encouraging preliminary support that MBSR decreases hostility, particularly hostile behaviour, in older individuals at risk for CAD. Moreover, benefits cumulate over time, and with greater practice. Large-scale research is needed to corroborate these findings and to identify pathways by which MBSR impacts trait hostility.Keywords: MBSR, hostility, CAD, stress, metabolic syndrome, RCT, pilot study
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CHALLENGES IN INFLAMMATION MEASUREMENT: ASSOCIATIONS BETWEEN SOCIAL WELL-BEING AND MULTIPLE INFLAMMATORY BIOMARKERS

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FRAUD IN AN ONLINE SURVEY STUDY OF PARENTS OF ADOLESCENTS AND YOUNG ADULTS WITH CANCER: WHAT WE LEARNED AND WHAT YOU SHOULD KNOW

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BACKGROUND: Online data collection is becoming an increasingly common and often viable option when targeting hard-to-reach populations. However, concerns call into question the validity of survey data (e.g., fraudulent respondents or duplicate submissions). We sought to identify hoax submissions in a sample of *parents* of adolescents and young adults with cancer (AYAs), determine if instating security precautions prevented subsequent fraudulent responses, and evaluate differences in demographics and distress outcomes between valid and non-valid respondents.

METHOD: The online survey study was designed to understand the experiences of a hard-to-reach population: *parents* of AYAs with cancer. Survey links were posted on the Facebook page and Twitter account of a social advocacy organization for AYAs with cancer. Original survey: Participants who completed the survey received a \$20 Amazon monetary compensation. Relaunch survey: Multiple protections were added, including a raffle.

RESULTS: With the initial survey, we noticed an unrealistic surge of participants (~310 parents) in the first three weeks of recruitment, which alerted us to potential fraud. Examination of the responses using a five-step hierarchy of post-survey criteria left only 11% (34) with complete and usable data. In the relaunched survey, we developed protocols to screen for eligibility pre-survey, added security features to the survey, and used a five-step hierarchy to identify fraudulent responses. Thirty-six additional surveys from parents of AYAs with cancer were collected, of which all (100%) were deemed valid. All valid completed surveys (n=70) were compared to fraudulently completed surveys (n=95). The fraudulent sample appeared more diverse (e.g., 62% male; 50% Native-Hawaiian/Pacific Islanders and African Americans); whereas, the valid sample was homogenous (92.5% women; 100% White) and similar to that in published studies. Most importantly, compared to valid respondents, fraudulent respondents had higher anxiety, depression, and post-traumatic stress (all p 's < .001).

CONCLUSIONS: Our data suggest that without a stringent protocol of security measures, study findings could indicate significantly different outcomes than what is actually present. It is critical for researchers collecting online data to add protections for screening and eligibility pre-survey, within survey, and post-survey to increase the validity of their research.

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UNDERSTANDING DEPRESSION SUBTYPES AMONG ADULT ONCOLOGY PATIENTS VIA LATENT PROFILE ANALYSIS

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Background: Depression remains poorly managed in oncology patients, in part because of the difficulty of reliably screening and assessing for depression in the context of medical illness. For example, whether or not somatic items actually skew our ability to flag “true” depression, or represent meaningful indicators of depression subgroups, remains to be determined. Additionally, subthreshold depressive disorders may represent clinically meaningful subgroups among those with cancer diagnoses. This study implemented latent profile analysis (LPA) to characterize depressive symptom profiles of patients in the cancer setting.

Method: Depressive symptoms were assessed using the PHQ-9, Endicott Criteria, and CES-D in a group of ambulatory outpatients with cancer; only those participants who scored a 1 or more on depressed mood, anhedonia, or suicidal ideation were included in these analyses (N=295). LPA was utilized to characterize the underlying latent depressive symptom profiles and to determine the best fitting model. Chi-square tests examined clinical and demographic differences between classes.

Results: Participants were 54% female (n = 160), predominately White (85%; n = 251), 10% identified as Hispanic (n = 28), and mean age was 63 years old (SD = 11.5). Multiple cancers were represented with lung (12%; n = 34), ovarian (11%, n = 32), and prostate (10%; n = 28) representing the largest groups. LPA supported a 4-class model as the best fit: anhedonia-somatic (Class 1; 17%, n = 49), low energy-depressed mood (Class 2; 23%, n = 68), mild symptom (Class 3; 43%, n = 126), and major depression (Class 4; 18%, n = 52). Those in the Class 3 were more likely to be married men; participants in Classes 2 and 4 were more likely to report past or current treatment for depression; Classes 1 and 4 reported worse self-rated health status.

Conclusions: LPA results demonstrated 4 distinct symptom profiles of depression varying by predominate symptom pattern and on several key demographic and clinical characteristics; these differences would not have been identified without the unique capabilities of LPA. These results illustrate the need for researchers and practitioners to focus on varying phenotypes of depressive symptoms in the cancer setting. Future studies should examine whether the depressive symptom classes identified demonstrate reliability within an oncology sample over time and whether or not they warrant distinct treatments.

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HEALTHY BEHAVIORS FOR CHRONIC DISEASE MANAGEMENT:
A STUDY OF BEHAVIOR MODIFICATION AND ACCULTURATION
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Hypertension, type II diabetes, and hypercholesterolemia are leading chronic diseases in the United States. In 2016, the Centers for Disease Control and Prevention (CDC) reported that about half of all adults, 117 million people, had one or more chronic conditions and one in four adults had two or more. These conditions disproportionately affect Latinos in the U.S. We examined the association between language, an acculturation proxy, and adoption of recommended healthy behavior modifications among Latino adults sampled in the 2011–2014 waves of the National Health and Nutrition Examination Survey. The study population included participants who were 20 years of age or older and who self-reported prior physician diagnosis with hypertension, hypercholesterolemia or diabetes (N=1,196). We examined the adoption of three healthy behaviors- namely, weight loss in past year, leisure time physical activity (LTPA), and smoking cessation for 1 or more years- identified by the CDC to successfully manage all three chronic health conditions. A total score of behavior change was created and those with scores of 4 or higher were categorized as 'high motivation' behavior change adopters. Log binomial models were fit to estimate prevalence ratios (PR), accounting for the complex survey design of NHANES. More than half of our study participants reported hypercholesterolemia (66.7%) and hypertension (62.3%), and 29% reported having diabetes. The most salient positive health behavior adopted was smoking cessation (83%), while less than half met leisure time physical activity recommendations or attempted to lose weight. Crude models showed that Latinos who spoke English exclusively were significantly more likely to report positive behavior change than Latinos who only/ mostly spoke Spanish (PR: 1.30, CI: 1.06, 1.60), with comparable estimates observed for bilingual study participants and in fully adjusted models. Our findings provide new evidence on behavioral patterns for Latinos living with chronic health conditions and show that increased English language use is associated with improved health behaviors, raising intriguing questions on acculturation-related processes and health.

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ADOLESCENT EXERCISE AND DIETARY CHANGE RELATED TO
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Health behaviors such as diet and exercise in adolescence are important for establishing and maintaining health across the lifespan. Early intervention for maladaptive health behaviors in adolescence is an opportunity to help shape health behaviors into adulthood. Previous research, using the Transtheoretical Model, has shown pros and cons contribute to the process of change in health behavior in adults. The current study examines concrete effects of pros and cons on amount of fruit and vegetable (FV) intake and physical activity (PA) in an adolescent sample.

The present study examined two mediational models, (1) pros and cons of FV consumption and the amount of servings per day at time one (T1) and time two (T2) and (2) pros and cons of PA and how much PA is done at T1 and T2. Participants included 4,158 middle school students ($M_{age} = 11.4$, $SD = .69$) in the northeast, 52.2% were females and 65% were Caucasian. Participants were recruited through an intervention program, Project BEST. All measures were collected through a self-report survey, and pros and cons of FV and PA were collected at T1 only and constructed by summing four items per construct.

The mediational model used pros and cons as IVs, servings of FV/amount of PA T1 as mediators, and servings of FV/amount of PA T2 as DVs. The indirect mediation model fit was acceptable for FV ($= 4.37$, $p > .05$, $CFI = .99$, $RMSEA = .02$). The amount of explained variance for servings of FV T1 was a small ($= .03$) and at T2 was medium ($= .15$). Pros FV was a significant predictor of servings of FV T1 ($\gamma = .29$, $p < .05$) while cons FV was not significant ($\gamma = .007$, $p > .05$). Servings of FV T1 was predictive of servings T2 ($\Gamma = .016$, $p < .05$). When applied to PA the fit was also acceptable for the indirect mediational model, ($= 13.1$, $p < .05$, $CFI = .99$, $RMSEA = .04$). The amount of explained variance for amount of PA T1 was small ($= .03$) and at T2 was medium ($= .19$). Pros PA and cons PA were significant predictors of the amount of PA at T1 ($\gamma = .19$, $p < .05$; $\gamma = .017$, $p > .05$). PA at T1 was predictive of PA at T2 ($\Gamma = .015$, $p < .05$).

The pros and cons of FV and PA appear to predict the amount of servings per day and activity per day at time point one. The amount of FV consumed and PA done at T1 is predictive of the amount done at T2. This supports the idea that pros and cons contribute to the level of activity in the health behaviors of FV intake and amount of PA. However, it does not fully account for the level of activity in the health behaviors. The support for the contribution of pros and cons has clinical implications for assessment and intervention in FV and PA in adolescents.

Learning Objectives: After attending this session, participants will have an increased understanding of the role of pros and cons in the process of change in health behaviors.

After attending this session, participants will be able to discuss the role of increasing pros and decreasing cons in health behavior change for adolescents.

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EXECUTIVE FUNCTION PREDICTS MEMBERSHIP IN LATENT CLASSES OF MULTIPLE HEALTH RISK BEHAVIOR ACROSS EARLY ADOLESCENCE

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INTEREST IN LIFESTYLE ADVICE AT LUNG CANCER SCREENING: DETERMINANTS AND PREFERENCES

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THE COMPLEX HOSPITALIZED PATIENT: HOW PSYCHOLOGISTS MIGHT PLAY A ROLE IN IMPROVING CARE

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In primary care settings, where multimorbidity is increasingly the norm, there is a recognition that integrated care can improve outcomes. Behavioral interventions that target multiple conditions are an essential component of integrated care, but can be a challenge to implement. Herein we describe our initial efforts to integrate psychological/behavioral services for inpatients on an inpatient medicine psychiatry unit. The Medicine in Psychiatry unit uses a multidisciplinary approach to improve outcomes among patients with acute medical illness and underlying behavioral health needs. While the structure of the unit provides many advantages for patients with multimorbidity, including daily medical rounds with social workers and psychiatric consultants, it does not use a systematic approach for psychosocial evaluation and intervention. Our study was developed to assess opportunities for integrating behavioral health services into the multidisciplinary team. Our mixed-methods approach included observation of daily rounding which informed a 21-item survey completed by clinicians. We report findings from our study and discuss areas of overlap between unit needs and widely available behavioral health services including specific clinical services (e.g., Brief Motivational Interventions, psychological testing, behavioral modification), ongoing consultation (e.g., patient behavioral concerns, diagnostic presentations, discharge planning for patients with complex needs), and staff trainings (e.g., verbal and physical aggression, personality disorders). Implications for program development and interdisciplinary training opportunities will be discussed.

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UPTAKE OF AN INCENTIVE-BASED HEALTH PORTAL FOR EMPLOYEE HEALTH: PROCESS EVALUATION OF CHANGE4LIFE

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Background: The workplace is recognized as an important setting for health-related interventions (Brown et al., 2013), and evidence from systematic reviews (Mitchell et al., 2012) suggest that financial health incentives, such as paying people to exercise or lose weight, may promote healthy behaviours and improve health outcomes. While there is limited evidence to support the sustained effects of incentive-based intervention, incentives targeting self-regulatory behaviours (e.g., self-monitoring) have been theorized to drive exercise maintenance. Best Life Rewarded (BLR) is an incentive-based health and wellness platform that rewards individuals for managing and improving their own health, enabling users the opportunity to self-monitor, set goals, and action plan. The purpose of the current study was to examine the uptake of BLR offered to a large health organization in Southern Ontario, which is oftentimes underutilized.

Method: Change4Life was officially launched to 6,072 eligible employees, with 869 individuals signing up to the program in the first year (representing about 14% of the total eligible employee population). All enrollees were encouraged to complete a health risk assessment and incentivized for doing so. Participants accrued points for tracking diet, cholesterol, blood sugar, and syncing Fitbit devices. A total of 384 participants (*M* age = 45.5 years) completed the health risk assessment, with the majority being female (90%), married (57%), and having at least a college diploma (84%).

Results: Overall users reported being in good to excellent health (82%), were predominantly non-smokers (93%), and indicated a good to excellent diet. Interestingly, however, only one-third of users were meeting recommended physical activity levels and/or daily consumption of fruit and vegetables. Usage data also suggests that only 27% of participants did not engage with Change4Life beyond one month, and only 15% sustained engagement for more than three months.

Discussions: Overall, 14% uptake from an organizational wellness program was positive. Unfortunately the usage was not sustained long-term, with the vast majority of participants ceasing engagement within the first 30 days. Future work will begin to assess the impact of behaviour change among users of Change4Life.

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WOMEN'S USE OF GUIDED IMAGERY DURING A MULTI-BEHAVIOR INTERVENTION FOCUSED ON STRESS, FOOD CRAVINGS, AND EXERCISE

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Introduction: Finding ways to help individuals modify diet and exercise behavior is important given that a large proportion of adults in most developed countries are overweight or obese. Psychological stress has been implicated in the regulation of diet and exercise while guided imagery has shown promise addressing all three health behaviors. However, few multi-behavior studies have address these behaviors simultaneously using guided imagery.

Objectives: The purpose of this short report was to describe the experiences of 29 overweight or obese women ($M_{age} = 44$) who completed a multi-behavior guided imagery intervention that simultaneously targeted psychological stress, food cravings, and physical activity behavior.

Design: Qualitative

Procedures: Participants co-created tailored guided imagery scripts with health coaches for daily use as part of the 5-week intervention. Post-intervention semi-structured interviews were transcribed verbatim and content analyzed for common conceptual themes.

Results: The results showed that 83% or 24 participants stated they would continue using guided imagery.

Conclusions: Guided imagery has the potential to address multiple health behaviors and our results shed light on the use of tailored scripts to manage or lose weight in overweight and obese women.

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ORAL HEALTH NEEDS AND BARRIERS TO DENTAL CARE AMONG SMOKERS CALLING STATE TOBACCO QUITLINES

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Smokers are at increased risk of oral disease. Those eligible for care through state-funded tobacco quitlines may be at particular risk given their lower socioeconomic status, which could limit access to dental care and also contribute to lower adherence to recommended routine oral self-care. To better understand the oral health needs and barriers to dental care among quitline callers, we surveyed smokers enrolled in the Oral Health 4 Life trial at baseline. All participants (*n*=718) had at least some natural teeth, had not seen a dentist in the past 6 months, were eligible for cessation treatment through the Oregon (OR), Nebraska (NE) or Louisiana (LA) quitlines, and met other study requirements. Participants were racially diverse (58% White, 29% Black, and 13% other or multiple races). Nearly 87% had an annual household income under \$40,000, 15% had a college degree, and 12% lived in a rural area. Participants smoked an average of 19 cigarettes per day, and 71% rated their oral health as "fair" or "poor." Less than half met the American Dental Association's recommendations for twice-daily teeth brushing (48.3%), and only 27% flossed daily. Most (80.2%) had not seen a dentist in more than a year, and 28% had not seen one in more than five years. Reported oral health problems include stained or discolored teeth (79.8%), toothaches/sensitive teeth (61.8%), bleeding gums (37.1%) and difficulty eating/chewing (32.9%). Most (71.4%) reported three or more oral health problems, and these individuals were more likely to be non-elderly (72.6% for ages 18–64 vs. 48.3% for ages ≥65; *p*=0.02) and White (76.3% vs. 64.6% for non-White; *p*<0.01). Reported barriers to dental care include cost (78.5%), a lack of dental insurance (75.1%), fear or nervousness (35.3%), and viewing other health concerns as more important (26.5%). Less common were access-related barriers such as an inability to find a dentist (19.3%) or difficulty getting to a clinic (12.3%). Cost was a particular barrier for LA residents (81.6%) compared to residents of OR (71.9%) or NE (68.1%; *p*<0.01). About three-quarters of low-income residents (<\$40K annually) also reported cost and insurance barriers. This study confirms that smokers who are eligible for free services through state-funded quitlines are an important target group for oral health intervention, highlighting an important opportunity to partner with quitlines to better address the oral health needs of these high-risk smokers.

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A QUALITATIVE STUDY OF THE ROLE OF EMOTIONAL REGULATION IN WEIGHT LOSS MAINTENANCE

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Participants have found success using behavioral lifestyle interventions to lose weight, but maintaining these losses remains a challenge for many (Peirson et al., 2015). The role of emotions in the process of lifestyle change may provide a clue to how some are able to maintain their success over longer periods of time while others regain weight (Bennett, Greene, & Schwartz-Barcott, 2013). The following research questions guided this project: 1) how do individuals working to lose weight perceive the impact emotions have on their long-term success, and 2) What strategies do more or less successful participants use to regulate their emotions? Semi-structured interviews were conducted by phone with 21 participants in an insurance-subsidized weight management program. Participants who completed a minimum of 18-months in the program were split into three groups based on weight change at 18-months: regain, moderate weight loss of 3–6%, and significant weight loss >7%. Those in the regain group had at one point in the program achieved an average weight loss of over 6%, similar to the moderate weight loss group, thus this group was classified regain. Interviews were transcribed and coded following thematic analysis. Codes were then organized by weight loss group to display differences across participants in their perspectives of the role of emotions during their weight loss journey. Four broad themes emerged: awareness of emotional impact, emotional regulation strategies, role of support, and the impact of personal attitude. The majority of maintainers spoke about the large impact of emotions and the need for the development of new strategies to regulate their emotions to be successful. Maintainers reported using a variety of strategies to regulate emotions, with exercise being the most commonly reported. Finally, maintainers differed from those who regained weight in that they spoke of a change in attitude as an important part of their success. A focus on long-term outcomes and breaking down goals into small steps were two common attitude changes. Conversely, participants who regained weight at 18-months described feeling stuck when talking about their experience in the program. From these findings, we present a conceptual model connecting the role of emotions, attitude, and behavioral regulation within weight loss to guide practice. Awareness of emotional impact is central to the model, driving changes in attitude and the development of new self-regulation strategies for participants who were able to maintain loss at 18-months. Tools to increase awareness, encourage attitude change, and develop improved self-regulation strategies will be discussed.

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AN ONLINE MULTIPLE HEALTH BEHAVIOUR INTERVENTION TO PREVENT CHRONIC DISEASE RISK AMONG AUSTRALIAN ADOLESCENTS: STUDY PROTOCOL

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Chronic diseases, such as cardiovascular diseases, diabetes and cancers, are a leading cause of death and disability worldwide. Six behavioural risk factors (smoking, alcohol use, poor diet, physical inactivity, sedentary behaviour and poor sleep) have been identified as strong determinants of chronic disease risk among Australians. Alarming, 74% of young Australians (aged 12–17 years) have consumed alcohol, 23% have used tobacco, 85% do not meet physical activity guidelines, 80% do not meet guidelines for sedentary behaviour, 25% do not get adequate sleep and 95% do not eat enough fruit and vegetables. Not only are these behaviours risk factors for disease and mortality, in the short-term they are associated with obesity and mental health problems. These six risk factors (the “Big 6”) commonly emerge early in life and co-occur as clusters. Therefore, early and effective prevention is critical.

This study seeks to develop and evaluate a two-tiered eHealth multiple health behaviour intervention to concurrently target the Big 6 risk behaviours among Australian adolescents. We will utilise established frameworks for primary and secondary prevention to reduce or delay the risk factors for chronic disease, and intervene early where early signs of risk factors have already emerged. A cluster randomised controlled trial (RCT) will be run in 80 schools (8000 13-year-olds) across three Australian states in 2019. The RCT will evaluate the effectiveness of the two-part intervention: 1) A ‘universal’, online school-based prevention program and accompanying smartphone application (‘app’) targeting the Big 6 behaviours delivered to Year 8 students (*Healthy Lifestyles program – primary prevention*), and 2) An early intervention booster app delivered to students who remain at-risk of chronic disease as they progress through high school (*Healthy Lifestyles program – secondary prevention*).

The co-development process of the interventions and the study design will be outlined. Results from initial end-user consultation and focus testing will also be presented. This will be the first evaluation of a two-tiered eHealth intervention that concurrently targets six key lifestyle risk factors among adolescents, *prior to the onset* of chronic disease. Addressing the Big 6 during adolescence will not only improve the health of young Australians in the short term, but also carries enormous potential to enhance their capacity to lead healthy adult lives.

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CHANGES IN HEALTHY GOAL COMMITMENT AND AUTOMATICITY DURING A TECHNOLOGY-ASSISTED MULTIPLE HEALTH BEHAVIOR INTERVENTION

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Current research is mixed concerning whether changes in multiple diet and activity health behaviors should be initiated simultaneously or sequentially. While focusing on simultaneously changing two or more health behaviors may energize commitment to a general goal of living a healthy lifestyle, a sequential approach to behavior change may reduce burden and help individuals focus attention on specific behaviors, leading to the formation of stronger habits. The present study examined these competing mechanisms during a technology-assisted multiple health behavior change intervention. Participants (n=212) were randomly assigned to one of three 3-month treatments. In the simultaneous (SIM) condition, participants were instructed to increase fruit and vegetable consumption (FV), increase physical activity (PA), and decrease sedentary leisure screen time (SED) at the start of the intervention. Sequential (SEQ) condition participants received instruction to increase FV and decrease SED at the start of the intervention, and then additionally, after six weeks, received instruction to increase PA. Participants in a contact-matched control condition completed stress management training. During the intervention, all participants received weekly study calls and self-monitored their behavior using a smartphone application, with assessments at baseline, 3, 6, and 9 months.

The main analyses (previously reported) of this intervention indicated that health behaviors, which were poor at the start of the intervention, improved in, and did not differ between, the SIM and SEQ conditions. For all behaviors, self-reported automaticity (a measure of habit strength) improved between baseline and the 3- and 9-month follow-ups (Bs=.44-.75, $p<.05$). For most behaviors, the extent of improvement was comparable across treatments. However, for sedentary behavior, participants receiving either SIM or SEQ treatment tended to increase automaticity to a greater extent than controls (B=.52, $p=.06$). For all behaviors, better performance at the end of treatment was correlated with greater automaticity ($r_s=.27-.38$, $p<.05$). Healthy goal commitment was high at baseline and decreased slightly over time in all conditions. These results suggest that technology-assisted health interventions, whether involving sequential or simultaneous prescriptions, can strengthen healthy habits.

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ILLNESS BEHAVIORS MEDIATE THE LINK BETWEEN SOCIAL SUPPORT AND FUNCTIONAL DECLINE IN THE SWEDISH ADOPTION TWIN STUDY OF AGING

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Background: Social connections in late-life are associated with functional health, well-being, and survival. Although there is an abundant literature on social relationships and health, research on the mechanisms linking the two has primarily focused on primary, preventive health behaviors (diet, exercise) or disease management (adherence). The role of illness behaviors (IB) (perceptions, evaluations, and responses to illness) as a pathway linking social support to late-life functional health is not understood.

Aim: We evaluated the extent to which IB trajectories mediate the association between social support availability (from friends and family) and functional decline across 6 questionnaires (Qs) (1987–2010) in the Swedish Adoption Twin Study of Aging.

Method: Analyses included 1,314 individuals (29–96 years, M_{age} baseline= 60.26; $SD=13.20$; 57% female). Family and friend support were self-reported composites from the first Q. Illness behavior measures were CFA-derived factor scores across the first 4 Qs; higher scores reflected greater somatic complaints, medication use, pain limitations, and perceived illness complications. Functional difficulties were measured from a composite of 7 activities of daily living (ADLs) across 6 Qs. Longitudinal mediation models in a latent growth curve framework evaluated whether illness behavior trends across age mediated the association between social support availability and functional trajectories. Analyses were adjusted for data dependency, sex, SES, and comorbidity.

Findings: Greater social support predicted reduced IB levels at age 60 ($p<.0001$; $d=.08$), but not IB change. Higher IB levels at age 60 predicted subsequent ADL difficulty at age 75 ($p<.0001$) but not ADL change afterward. Conversely, lower IB levels at age 60 partially explained the association between greater support and reduced ADL difficulty at age 75 ($p<.0001$), accounting for more than half of the total relationship. The only significant indirect effect was through functional status rather than change. Lastly, there was a separate unmediated path from a linear increase in IB to accelerated ADL difficulty after age 75 ($p=.011$; $d=1.25$ across 5 years).

Conclusion: Illness behavior levels in late-life represented a significant mediating pathway linking support availability to subsequent improvements in functional status. Although illness behavior change did not play a mediating role, its association with accelerated functional decline suggests a health process distinct from social support.

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MULTIPLE HEALTH BEHAVIORS AND ALL-CAUSE MORTALITY AMONG U.S. ADULTS

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Introduction: While some risk health behaviors occur together, the impact of multiple health behaviors on mortality has not been fully examined in the literature. Using a nationally representative sample of U.S. adults, this study was aimed to examine the impact of multiple health behaviors on all-cause mortality.

Methods: National Health Interview Survey (NHIS) data from 1997 through 2005 were linked to the National Death Index (NDI) with a follow-up to December, 31, 2011. The primary dependent variable was all-cause mortality; the predictors included four multiple risk health behaviors (current smoking, heavy drinking, physical inactivity, and obesity). Confounding variables included demographics, socio-economic status, and health insurance. The analyses included U.S. residents who were 30 years old and older (N=180,875, Population Estimate: 205 million). The primary statistical analysis relied on fitting Cox proportional hazards models.

Results: Among the U.S. population of adults, 22.3% engaged in at least two risk behaviors. Engaging in all multiple health behaviors was related to 2.6 times elevated mortality risks compared to zero risk behavior, albeit these risks varied by socio-demographic variables. Mortality risks also varied by the combinations of risk behaviors. When the combinations included smoking, the mortality risks were high. When the combinations include obesity, the mortality risks were low.

Conclusions: Clustering of four risk health behaviors was associated with more than two-times higher mortality risk compared to zero risk behavior. Multiple health behavior interventions addressing more than one risk behavior simultaneously, especially including smoking, will save millions of lives in the U.S.

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PARTICIPANTS EXPERIENCES IN A CULTURALLY APPROPRIATE PEER SUPPORT PROGRAM FOR AFRICAN AMERICANS WITH TYPE 2 DIABETES

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Background and Purpose: Specific ways in which peer support recipients describe their experiences of support received from a trained peer supporter in a culturally appropriate peer support program are poorly understood. Our central question was: “What are the defining features of a culturally appropriate peer support program for African Americans with type 2 diabetes?” We explored participants experiences related to: assistance with daily disease management, emotional support, linkage to clinic care and community resources, and ongoing support. We used qualitative interpretive descriptive approach.

Method: Data were gathered through semi-structured interviews with 20 low-income African Americans with type 2 diabetes who were participating in a peer support program. Interviews captured participants’ background and experiences with the peer supporter in providing culturally appropriate support. We coded all data deductively using predetermined codes found in peer support literature and inductively to identify emergent themes.

Results: We identified three themes: 1) healthy cooking, healthy eating, reading food labels and exercise. 2) ‘she will call’ 3) emotional support was a by-product of the support activities.

Discussion: Our findings mirror the broader literature on what constitutes culturally appropriate peer support programs for ethnic minorities. The information and knowledge transfer were tailored to the specific needs of the target population, taking into consideration their cultural beliefs and language requirement. Culturally appropriate peer support program complementing diabetes medical management may be a means of reaching the hardly reached low income ethnic minorities and thus help to close the health disparity gap affecting this population.

Conclusion: We suggests the inclusion of culturally appropriate peer support programs to complement diabetes management as a targeted plan to improve diabetes clinical care and ultimately, diabetes outcome.

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SBIRT AT A LEVEL 1 TRAUMA CENTER: EVALUATING THE CURRENT STANDARD OF CARE AND IDENTIFYING AREAS FOR IMPROVEMENT

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Unhealthy alcohol use causes many of the injuries that bring people to trauma centers and this patient population is at considerable risk for alcohol-related trauma recidivism. As part of the American College of Surgeons Committee on Trauma accreditation requirements, Level 1 trauma centers are required to have a mechanism to identify patients whose drinking is unhealthy and to provide an intervention. Screening, Brief Intervention and Referral to Treatment (SBIRT) is a comprehensive, evidence-based approach that uses alcohol screening to provide early intervention and treatment to those with risky alcohol use.

In 2014, the Behavioral Medicine Consultation-Liaison (CL) service at Cooper University Hospital (CUH) implemented an SBIRT-based standard of care (SOC). The alcohol use disorders screening test (AUDIT) was chosen as the tool to assess alcohol use with newly admitted trauma patients. Brief intervention (BI) is provided to those with a positive screen. The CL provider is trained in motivational interviewing to determine need and desire for behavior change. The BI includes education on the effects of alcohol use and talking about strategies to manage use and cut down (or eliminate use), avoid certain risks (e.g., drinking and driving), and seek help from community referrals. Follow-up consists of a phone survey in which patients are rescreened with the AUDIT and asked about changes to drinking patterns, re-hospitalizations and alcohol-related treatment. The current study aims to evaluate the effectiveness of the SOC at CUH and provide recommendations for its continued improvement.

Trauma patients ($n = 464$, 75.8% male, 58.0% White) with elevated alcohol levels ($M = 187.67$) were referred to the CL service per the SOC. Initial AUDIT scores were significantly related to alcohol levels on admission ($r = .18$, $p < .001$). At follow-up, patients reported modifying the way they drink and seeking treatment for alcohol (71% and 26%, respectively). A paired samples t -test found significantly reduced AUDIT scores ($t(55) = 4.63$, $p < .001$, $r = .53$) for those who completed the SOC. Fourteen patients reported hospitalizations since the initial visit; only two were alcohol-related. Additional data is anticipated and will be included in future analyses.

This evaluation found significant reductions in AUDIT scores and positive changes in alcohol consumption patterns in the year following initial hospital admission, which provides sufficient evidence for continued use of this SOC. To improve future effectiveness, modifications to enhance fidelity to the SBIRT model are recommended, such as instituting additional training for hospital providers, utilizing technology for more standardized screenings, incorporating additional evidence-based components into the BI (e.g., mindfulness training), and publicizing our work to educate and engage professionals from other institutions about SBI services.

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THE CROSSOVER EFFECT OF PREDICTING INTENTIONS OF MEETING CARDIO AND MUSCLE STRENGTHENING PHYSICAL ACTIVITY RECOMMENDATIONS

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Research that focuses on predicting and changing physical activity oftentimes focuses on aerobic physical activity (PA), while ignoring muscle strengthening PA. According to the Centers for Disease Control and Prevention, while a little over half (50.2%) of US adults meet recommendation for aerobic PA, less than one-third (29.6%) meet muscle strengthening recommendations. Both types of physical activity are modifiable determinants of health that if done in the appropriate amounts, can greatly reduce health risks, specifically from chronic diseases, and improve one's quality of life. Promoting aerobic and muscle strengthening PA together would be ideal for a multiple health behavior change intervention, given their inherent similarities (i.e. both can be performed in a single workout session and require similar equipment). Yet, the two behaviors should be studied and intervened upon independently, because they have different recommendations, and different skills are needed to perform them. When interrelated health behaviors are studied together, a crossover effect can also be evaluated, through which one behavior can be examined by theory-based determinants of the other interrelated behavior (i.e. intentions towards aerobic PA may predict intentions towards muscle strengthening PA). The purpose of this study was to examine the crossover effect for predicting both types of PA, using constructs of the Integrative Model of Behavioral Prediction for both behaviors. Undergraduate students ($n=392$) completed an online survey evaluating each type of PA, and its theoretical determinants (intentions, attitudes, perceived norms, and perceived behavioral control (PBC)). Two stepwise multiple linear regression models were run for both types of PA. The first (base) model used the behavior's own behavioral determinants to predict intentions. The second (omnibus) model added behavioral intentions from the other type of PA to the base model. Results from the first set of models indicated that attitudes, perceived norms and PBC predicted a significant amount of variance of intentions [aerobic (46.2%); muscle strengthening (53.9%)] for both PA groups. Results from the omnibus set of models showed that adding behavioral intentions from the interrelated PA behaviors moderately improved the amount of variance explained [aerobic (57.1%); muscle strengthening (60.9%)]. Overall, the IM was found to be a robust framework for predicting the intentions of aerobic and muscle strengthening PA. When testing the crossover effect of behavioral determinants, all models moderately improved, which provides implications for promoting aerobic and muscle strengthening PA.

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THE IMPACT OF THE WORKSITE HEART HEALTH IMPROVEMENT PROJECT (WHHIP) ON CARDIOVASCULAR RISK FACTORS AMONG LONG-TERM CARE STAFF

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Worksite health promotion is an effective way to engage otherwise difficult to access populations (e.g., unhealthy, low-income, minority individuals) in health promotion interventions aimed at reducing cardiovascular disease risk. This presentation will discuss the findings from an 18-month cluster randomized control trial that tested the impact of the Worksite Heart Health Improvement Project (WHHIP) on cardiovascular risk factors among long-term care staff ($n=98$). The WHHIP included a 9-month exercise, nutrition, and stress management intervention implemented during paid work time that was rooted in the social ecological model and social cognitive theory. Participants were followed for an additional 9-months to preliminarily assess long-term adherence. Subjective data collection was assessed via survey and included the following concepts: mood, dietary intake, sleep quality, and sleep duration. Objective data collection included: physical activity engagement, body mass index, blood pressure, and total cholesterol. There was a significant positive treatment effect for mood ($p = .013$), sleep quality at 9-months ($p=.029$), diastolic blood pressure at 18-months ($p = p=.022$) at 18-months. There was a trend towards decreased dietary sodium intake at 6-months ($p=.084$) and dietary fat ($p=.087$) at 9-months. While both groups reduced their BMI, the education only group lost significantly more weight overtime ($p = .045$). We concluded that the WHHIP improved some cardiovascular disease risk factors but further improvement in outcomes were limited by overwhelmingly high reports of job stress. Job stress limited participation in the intervention activities, impacted engagement in healthy behaviors, and resulted in high rates of employee turnover. Our presentation will also include lessons learned from implementing the WHHIP as well as next steps, which resulted from end of study focus groups.

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THINKING BEYOND SEX DIFFERENCES IN HEALTH: THE ROLE OF GENDER IN HEALTH-PROMOTING AND HEALTH-RISK BEHAVIORS

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Background: Most prior research examining gender differences in health has examined a person's self-reported sex. Other aspects of gender, such as personality traits stereotypically associated with masculine (e.g. forceful, dominant) and feminine (e.g. affectionate, understanding) gender roles, have received less attention. NIH highlights that gender can influence health through pathways above and beyond physiology, including health behaviors. However, few studies have examined how gender-typed traits influence behaviors (e.g. interpersonal strategies, healthcare utilization) known to impact health and have been shown to differ between men and women. Studying psychological dimensions of gender may add to understanding factors beyond sex that influence behavior change, and offer a nuanced perspective to understanding sex differences in health behaviors.

Aim: To assess the extent to which men and women's endorsements of gender-typed traits (masculinity and femininity) predicted health behaviors, and whether sex moderated these associations.

Method: Participants were 486 middle-aged and older adults (40–79 years old; $M = 55.57$; 54.5% female) recruited from Amazon Mechanical Turk to complete an online survey. Composite measures of stereotypical masculine and feminine traits, interpersonal strategies (e.g. interdependence, social support), health-promoting behaviors (e.g. physical activity, nutrition), and health-risk behaviors (e.g. alcohol use), were assessed. A path analysis in SPSS Amos was computed, where gender-typed traits were entered as predictors of health behaviors.

Findings: Model fit was acceptable ($\chi^2(5) = 10.17$, $R^2 = .15-.37$, CMIN/df = 2.04; CFI = .99; RMSEA = .05). A multi-group analysis that evaluated path value differences between men and women, revealed no moderation. The model was the same for men and women ($\Delta\chi^2(12) = 16.89$, $p = .15$). For men and women, gender-typed traits were found to be significantly and differentially associated with behaviors. For example, greater endorsement of stereotypical masculine traits predicted less interdependence and more health-risk behaviors. Whereas, greater endorsement of stereotypical feminine traits predicted greater interdependence and fewer health-risk behaviors.

Conclusion: Future studies should assess psychological aspects of gender and diversity within men and women's gender identification to better understand the development and prevention of a range of health behaviors, which in turn can inform changes in a healthcare context.

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ADVERSE CHILDHOOD EXPERIENCES, EXECUTIVE FUNCTION, AND WEIGHT LOSS IN AMERICAN INDIANS: RESULTS FROM POWER-UP

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Background: Adverse childhood experiences (ACEs) are repeatedly shown to predict negative biopsychosocial health outcomes, including adult obesity. American Indian (AI) communities have been shown to have high rates of both ACEs and obesity. Despite these lines of evidence, little work has been done to examine how ACEs relate to weight loss and executive function (EF) indicators, which may be critical to self-regulation and weight control. The Pilot of Weight Reduction in an Underserved Population (POWER-UP) trial addresses these gaps by examining ACEs and EF indicators as they relate to one another and weight loss success in an AI sample participating in an open weight loss pilot trial.

Methods: 48 overweight/obese AI adults (aged 43.3 ± 10.3 years, 85% female; baseline BMI = 36.8 ± 4.4 kg/m²) enrolled in a 6-month open weight loss trial (Identifier: NCT02786238). ACEs and EF were measured at baseline using the Adverse Childhood Experiences Scale and the NIH Cognition Toolbox, respectively. Specific domains of EF were working memory (WM), inhibitory control (IC), and cognitive flexibility (CF). The primary outcome was percent weight loss (%WL) at post-treatment. For %WL, we utilized an intent-to-treat approach with last weight carried forward for all participants.

Results: Greater ACEs were associated with lower CF ($\beta = -0.47$, $p = .015$) with a trend toward lower IC ($\beta = -0.23$, $p = .13$) after adjusting for age, gender, and baseline body mass index (BMI). ACEs were not related to WM ($\beta = 0.14$, $p = .483$). Lower CF predicted less %WL ($\beta = .33$, $p = .032$), whereas IC ($\beta = .18$, $p = .270$) and WM were unrelated to %WL ($\beta = -.08$, $p = .620$) adjusting for the above covariates. Adding ACEs as a covariate to the model attenuated the CF-%WL relationship ($\beta = .22$, $p = .316$). ACEs did not show direct effects on %WL ($\beta = -.07$, $p = .746$).

Conclusion: In an American Indian sample, adverse child experiences were related to poorer executive function, particularly cognitive flexibility. In turn, poorer cognitive flexibility was related to poorer weight loss outcomes. The role of ACEs in health may be related to their impact on cognitive function indicators essential to self-regulation behaviors.

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CHRONIC STRESS AND IMPULSIVITY LEVELS SYNERGISTICALLY PREDICT 18-MONTH INCREASES IN VISCERAL FAT

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Objective: To examine baseline chronic stress, indexed each as an objective status (i.e., caregiving for a child with an autism spectrum disorder [ASD] diagnosis versus caring for a healthy neurotypical child) and as a subjective experience (i.e., perceived stress levels), as well as impulsivity levels serve as predictors of changes in visceral fat among healthy mothers of young children in an observational, longitudinal, 18-month study. We sought to examine these factors both synergistically and individually.

Methods: We examined these associations in a prospective cohort of 113 adult women (age $M \pm SD$: 42.83 ± 4.70 ; BMI $M \pm SD$: 24.86 ± 4.32 ; 74% ($n=84$) White) who were either chronically stressed mothers caring for a child with an ASD diagnosis ('caregivers' $n=72$ participants) or lower stress mothers caring for a healthy child ('controls' $n=41$). Caregivers and controls were matched by age, ethnicity/race, and body mass index (BMI). Participants completed self-report assessments of subjective chronic stress (perceived stress scale; PSS) at baseline. We objectively assessed impulsivity using the Behavioral Analog Risk Task (BART) at baseline. We assessed visceral fat at each baseline and 18-month follow-up using bioelectrical impedance (ViScan).

Results: The interaction of baseline objective stress (caregiver versus control) and impulsivity predicted 18-month change in visceral fat such that greater impulsivity was associated with greater 18-month increases in visceral fat among caregivers ($\beta=.426$, $p=.008$), but not among controls ($\beta=-.013$, $p=.918$). The direction of findings and pattern of significance remained in both unadjusted models and after accounting for covariates. The interaction of baseline perceived stress (PSS) and impulsivity did not predict 18-month change in visceral fat ($p=.906$). Neither type of stress (caregiver status or perceived stress) nor impulsivity level independently predicted 18-month changes in visceral fat.

Conclusions: The combination of high objective chronic stress and high impulsivity may increase risk for visceral fat gain over time and therefore may identify an at-risk population requiring tailored intervention geared toward obesity prevention.

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DOES WEIGHT LOSS REDUCE WEIGHT STIGMA? RESULTS FROM A LONG-TERM WEIGHT LOSS MAINTENANCE TRIAL

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Background: Weight loss is associated with improvements in quality of life and some psychosocial outcomes. However, the impact of weight loss on weight stigma is largely unknown. The current study investigated the effects of weight loss, achieved with behavioral weight loss (BWL) counseling and pharmacotherapy, on perceived and internalized weight stigma.

Methods: Participants were 137 adults with obesity (85.5% female, 68.1% black, mean BMI = 40.8 ± 5.9 kg/m²) enrolled in a weight loss maintenance trial. All participants attended a 14-week meal replacement program accompanied by weekly group BWL sessions (Phase 1). Participants were then randomized to receive lorcaserin or placebo and attended 16 weight loss maintenance sessions over an additional 52 weeks (Phase 2, 66 weeks of total treatment). Participants completed the Public Distress (PD) subscale of the Impact of Weight on Quality of Life – Lite (IWQOL-Lite) scale and the Weight Bias Internalization Scale (WBIS) at baseline, randomization (i.e., before the start of Phase 2), and weeks 38 and 66. The IWQOL-PD is a measure of perceived weight stigma (e.g., the extent to which participants perceive discrimination from others due to their weight), and the WBIS is a measure of internalized weight stigma (i.e., the extent to which patients self-stigmatize due to their weight). Height was measured at baseline and weight was measured at all study visits. Nested mixed models with residual maximum likelihood were used to determine the effects of weight change from baseline to week 66 on changes in perceived (IWQOL-PD) and internalized (WBIS) weight stigma. Baseline demographic variables were included as covariates in all analyses.

Results: Changes in weight stigma did not differ by treatment condition, so data were collapsed across groups. Linear and quadratic models with variance component structure were fitted to determine the effects of weight change on changes in IWQOL-PD and WBIS scores, respectively. Results showed that change in weight over time did not significantly predict changes in scores on the IWQOL-PD [$F(1, 134.81) = .08$, $p = .78$] or WBIS [$F(1, 293.19) = 1.18$, $p = .28$].

Conclusion: Weight loss did not significantly predict changes in weight stigma among patients with obesity enrolled in a long-term weight loss maintenance trial. Targeted interventions are needed to reduce internalized weight stigma and related distress in individuals with obesity.

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WEIGHT STIGMA AND PROVIDER COMMUNICATION WITH PATIENTS WITH OBESITY

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Many healthcare providers have negative attitudes about higher-weight patients. The impact of these attitudes on provider behavior and communication quality in medical encounters is not known. We enrolled 120 advanced medical students from a single US medical school and measured their attitudes and beliefs about higher-weight patients and their perceptions of normative attitudes about weight among doctors. One to three months later, we video recorded them providing care for a standardized patient with higher weight. We evaluated patient centered communication in the encounter using several coding strategies. We conducted multivariate regression to assess the effect of attitudes and beliefs on patient-centered behavior. Students who expressed more dislike for providing care for higher-weight patients were rated as less friendly and observers were less likely to report that they would recommend them to family or friends. Student perception that negativity toward higher-weight patients was normative among healthcare providers was associated with lower observers' ratings of the providers': interest in caring for the patient, friendliness, engagement, respectfulness, and interactivity; as well as lower likelihood of performing behaviors consistent with person-centered care. These findings underscore the importance of intervening upon the attitudes of medical trainees as well as physicians and other role-models to trainees.

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COMMUNICATION BETWEEN PATIENT AND PRIMARY CARE PHYSICIAN AFTER LIFESTYLE MODIFICATION

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Introduction: Many primary care physicians (PCPs) have negative views of people with overweight/obese BMIs, which may lead to negative interactions and barriers to health behavior change. It is unknown if those conversations are more positive or supportive after a patient engages in lifestyle modification (LM) and incurs significant weight loss. This study surveyed adults after LM to examine patients' perspectives of their relationship with their PCPs.

Methods: Adults (n=145) who had seen their PCP in the past year were surveyed at the end of 18 months of LM. On average, participants last saw their PCP 4.2 months before the 18-month assessment (18-month M weight loss=11.9%). The survey included Likert scale questions (strongly disagree to strongly agree).

Results: During the last appointment, most PCPs provided general encouragement about weight control (90%), but few provided specific feedback on change in medical parameters (12%). Several participants noted their PCPs had negative reactions to their weight loss or current weight, including "my PCP told me to stop losing weight," and, "I bragged about the weight loss I achieved and my doctor told me I was still obese." There was large variation in patient response to that appointment: 68% of participants reported feeling more motivated to work on weight control, but 32% reported their feelings did not change or they were more discouraged. Participants varied in their response to "my primary care physician understands my barriers to weight control," with 42% indicating that they "neither agree/disagree" to "strongly disagree," and 58% agreeing to some degree.

Conclusion: There is wide variation in communication between PCP and patient after weight loss. Most PCPs were generally supportive, but few offered specific feedback on how weight loss positively affected other objective measurements of health. Also, a few were unsupportive or did not understand the benefits of a significant weight loss independent of current BMI. Additionally, many felt their PCP did not understand the difficulties of weight loss. Potentially, factors such as PCP weight stigma or limit of PCP knowledge of weight control explain this aspect of the relationship. Overall, these results show variation in communication and the relationships between PCP and patient after weight loss, and future studies should continue to examine how these relationships change over time and how that change may affect engagement in health behavior change.

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SEASONAL PATTERNS OF WEIGHT GAIN IN WEIGHT-LOSS TREATMENT SEEKING ADULTS

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Background: Research suggests adults gain more weight in fall and winter compared to summer months, and that this seasonal pattern, perhaps, is affected by sociodemographic factors (i.e., race, gender, BMI, age). Weight patterns in weight-loss treatment seeking adults are currently unknown.

Methods: Active duty military personnel (n=248) engaged in a 12-month program adapted from the Look AHEAD intensive lifestyle intervention. Participants were evenly distributed by gender and BMI category (50.8% female, 56.05% obese) and had a mean age of 34.6 years. Participants were reasonably diverse, 65.7% Caucasian, 19.8% African American, and 14.5% Other race category. BMI category (i.e., overweight, obese) was calculated from baseline in-clinic weight and height using the standard formula. Participants received an e-scale and asked to self-weigh daily. Average weight was computed across each calendar season [i.e., fall (Sept. 1-Nov.30), winter (Dec. 1- Feb. 28), spring (March 1- May 31), summer (June 1- August 31)]. Season weight was compared to subsequent season weight by race, gender, BMI, and age. Final regression models controlling for intervention enrollment season, previous season weight, and significant covariates examined weight change and are subsequently reported.

Results: On average, participants gained .97 lbs. from fall to winter, lost .79 lbs. from winter to spring, gained .89 lbs. from spring to summer, and lost 1.21 lbs. from summer to fall. There were no seasonal differences in age or race. However, those classified as obese gained more weight from fall to winter compared to those classified as overweight ($p=0.006$), and this BMI category difference was greater in men ($p=0.001$). In addition, from winter to spring, men lost more weight ($p=0.001$), and from spring to summer, women gained more weight ($p=0.033$). No BMI category differences were observed in these two season changes. From summer to fall, no differences by covariates in weight change were observed.

Conclusions: Among adults in a weight loss intervention, regardless of time from enrollment and influencing covariates, seasonal weight patterns were exhibited similarly to those in the general population. Further, seasonal weight change was influenced by gender and BMI, but, not by race or age.

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THE EFFECTS OF LOSS OF CONTROL EATING ON OVERWEIGHT AND OBSESSIVE INDIVIDUALS WITH CLINICALLY SIGNIFICANT EMOTIONAL EATING

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Emotional eating (EE; defined as eating in response to negative mood states) contributes to the onset and maintenance of obesity. EE is not considered a disordered eating behavior in and of itself, however, it is conceptually akin to loss of control eating (LOC; feeling like one cannot stop eating or control what or how much one is eating) which can similarly be triggered by negative emotions. EE and LOC appear to serve similar functions (e.g. as maladaptive coping strategies for distracting from or numbing out from negative emotions) and can be barriers to successful weight loss. Given the conceptual and functional overlap between EE and LOC eating, one might expect that individuals may have co-occurring EE and LOC. However, few studies have assessed for both behaviors, and therefore little is known about the frequency of LOC in individuals with EE. Because LOC is a more severe disordered eating we may expect that individuals with both EE and LOC are more disordered (eg. higher levels of eating pathology, emotion dysregulation, and poorer treatment outcomes). However, to date, no study has tested this.

In the current study, we used data from a small proof of concept study that evaluated emotion-focused treatment approaches for individuals with clinically significant EE (N= 54) and 1) determined the frequency of LOC eating in an overweight and obese sample with clinically significant EE 2) examined if individuals with EE+LOC have greater eating pathology and emotion dysregulation than individuals with EE alone and 3) examined if the presence of LOC impacts outcome from an emotion-focused treatment workshop. At baseline 52% (n=28) of individuals with EE had also experienced at least one LOC episode in the past month. Consistent with expectations the EE+LOC group reported more EE episodes ($t=2.35$, $p=.02$). Presence of LOC was associated with higher global eating pathology ($t=2.37$, $p=.02$), greater difficulty controlling impulses when distressed ($t=3.43$, $p<.001$, $pF(1,52)=7.22$, $p=.01$). Findings indicate that there is a group of overweight and obese individuals who frequently experience EE along with more severe LOC. For overweight and obese individuals with EE, co-occurring LOC is associated with higher levels of eating pathology and higher emotion dysregulation that can result in poor outcomes in emotion-focused treatments. Future studies should also assess for LOC within overweight and obese individuals who experience clinically significant EE.

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THE GEM INTERVENTION PROTOCOL: A TECHNOLOGY-ASSISTED WEIGHT-LOSS INTERVENTION IN PRIMARY CARE SETTINGS

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Background: Over one-third of American adults have obesity and are at increased chronic disease risk. Although Medicare reimburses physicians' 5As (Assess, Advise, Agree, Assist, Arrange) counseling patients with obesity, barriers to providing it include competing demands and low perceived competency. A technology-assisted, 5A-based weight management intervention to engage patients in setting behavioral goals may facilitate integration of obesity counseling in primary care.

Methods: We developed the Goals for Eating and Movement (GEM) protocol and algorithms for 5As weight management and conducted a pilot RCT (N=45) to evaluate the feasibility of implementing a technology assisted GEM intervention. The GEM intervention includes: 1) the online GEM tool via tablet, 2) health coach counseling and goal setting, 3) addressing barriers to participating in intensive weight management programs (e.g., the Veteran's Affairs MOVE! program and the Diabetes Prevention Program), and 4) follow-up telephone coaching. In a cluster-randomized control trial, we are evaluating the GEM intervention in two NYC healthcare systems (the VA New York Harbor Healthcare System Manhattan Campus) and Montefiore Health System Medical Groups (4 Bronx, NY sites) among both English and Spanish-speaking patients. Primary care (PC) teams were randomized (16 teams, 28 providers) to the GEM intervention or EUC (enhanced usual care). Providers in the GEM arm receive training in brief counseling and support. Patients (N=512) are recruited via mail and phone calls. Eligibility criteria include: age 18 – 69 years, obese or overweight with a comorbidity (e.g., arthritis, sleep apnea or hypertension), PC physician visit in the last two years, and no physical/mental health or other contraindications.

Results: We hypothesize that GEM patients will lose 2.2 kg more than EUC patients and that a higher percentage will have clinically significant weight loss (>5%). We will also examine whether the intervention improves clinical outcomes (e.g., blood pressure and waist circumference), improves behavioral outcomes (e.g., physical activity and dietary intake), and increases engagement in intensive lifestyle programs.

Conclusions: The GEM intervention utilizes the patient-centered medical home (PCMH) model of care while linking patients to existing evidence-based programs. This RCT will determine the effectiveness of the GEM intervention in a diverse patient population.

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A DAILY DIARY STUDY OF INTERNALIZED WEIGHT BIAS AND ITS PSYCHOLOGICAL, EATING AND EXERCISE CORRELATES

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Introduction: The current investigation extends EMA and daily diary weight stigma research in the area of internalized weight bias (IWB). Over the course of a month, utilizing daily diary methodology, this investigation examined the relationship between these common weight-related negative experiences and mood, coping, body appreciation, exercise behaviors, and eating behaviors.

Methods: The study sample consisted of 66 individuals (85% female) with $M_{BMI}=36.2$, $SD_{BMI}=6.4$ (range 25.5 – 59.5). Participants completed a daily diary each evening for 30 days and wore a Fitbit. Participants reported on internalized weight bias, mood, coping, body appreciation, exercise behaviors, and eating behaviors.

Results: Both within and between subjects IWB were significantly related to positive affect, negative affect, several coping responses, body appreciation, several eating behaviors, and the urge to avoid exercise.

Discussion: This investigation provides evidence that IWB experiences have daily impacts on psychological well-being, coping, eating, and exercise behaviors. Also, this study raises awareness about the upsetting internal experiences or personal reminders about weight that people with overweight/obesity commonly experience and its potential impact on psychological well-being.

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ACCEPTANCE-BASED VERSUS STANDARD BEHAVIORAL TREATMENT FOR OBESITY: WEIGHT LOSS, REGAIN AND QUALITY OF LIFE ACROSS 3 YEARS

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Acceptance-based behavioral treatments (ABTs; i.e., approaches that fuse behavioral strategies with tolerance of difficult internal experiences and loss of pleasure, mindful decision making and commitment to valued behavior) have been recognized as potential enhancements to the efficacy of gold standard behavior treatment (SBT) for weight loss. However, few full randomized controlled trials of these treatments have been conducted, and results have varied in terms of whether ABT's superiority was evidenced at post-treatment or at a later follow-up period and also in terms of whether certain variables moderated the treatment effect. The NIH-funded Mind Your Health Project randomly assigned overweight and obese participants ($n = 190$) to 25 sessions of either SBT or ABT over the course of 1 year. At post-treatment, ABT produced significantly greater percent weight loss (13.3%) than did SBT (10.2%). More recently collected data reveal that the superiority of ABT persisted at 1-year (7.6% versus 5.8%; linear effect $p = .04$) and (at trend) 2-year follow-ups (4.7% vs 3.3%; $p = .06$). Effects at post-treatment, but not 1 and 2-year follow-up, were moderated by baseline impulsivity. Moderators previously identified (depression, susceptibility to food cues) did not significantly impact the treatment effect. Of note, quality of life improved at faster rates and was better sustained in the ABT compared to SBT group ($p = .02$), even when controlling for weight losses. Overall, results suggest that infusing standard behavioral treatment for weight loss with acceptance-based strategies enhances weight loss and quality of life, that the benefits of ABT are experienced by most identified subgroups, and that these benefits are largely sustained (though not widened) into the very long term.

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ACCESS TO HEALTHCARE, DEMOGRAPHICS AND KNOWLEDGE IN WILLINGNESS TO CONSIDER BARIATRIC SURGERY AMONG SOUTHERN BLACKS AND WHITES

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Bariatric surgery is an effective intervention for morbid obesity. Although African-Americans (AAs) have a higher prevalence of morbid obesity than Whites, they are less likely than Whites to have the surgery. This disparity reflects AAs' lower access to healthcare and lower knowledge of and willingness to consider the surgery. Studies have focused on demographic and healthcare variables, with few studies of knowledge or of willingness. This preliminary study is the first to explore the role of demographic, healthcare, and knowledge variables in willingness to consider bariatric surgery. Participants were a random, household sample of 1670, southern, AA and White adults. They completed a brief, anonymous survey on weight/height (used to calculate BMI), demographics (race, age, education, income), and access to healthcare (health-insurance, a regular doctor, a usual source of care). A random subsample of $N=552$ (293 AA, 259 Whites) also received three knowledge and one willingness questions about bariatric surgery: Have you ever heard of bariatric surgery; Do you know anyone who has had bariatric surgery; Did you know that bariatric surgery results in long-term weight loss and can cure other health problems such as diabetes; If you are currently obese or become obese, would you ever consider having bariatric surgery. Univariate analyses revealed that a significantly larger percentage of obese AAs, compared to obese Whites, had never heard of the surgery, didn't know anyone who'd had it, and didn't know its health benefits, but there were no racial differences in willingness to consider the surgery. The logistic regression for the sample as a whole predicting willingness to consider the surgery revealed that current obesity and knowledge of the health benefits were the sole predictors; race, other demographic variables, and healthcare variables did not contribute. The same regression for Whites found that knowing someone who'd had the surgery was the sole predictor of willingness to consider the surgery. The same regression for African-Americans revealed that current obesity and knowledge of the health benefits were the only predictors of willingness to consider the surgery. These preliminary findings suggest that Whites' willingness to consider bariatric surgery might be enhanced by stories/blogs by those who have had the surgery, whereas African-Americans' willingness might be enhanced by information on the additional health benefits of the surgery.

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ADAPTING A BEHAVIORAL WEIGHT LOSS INTERVENTION FOR FACEBOOK DELIVERY: A PILOT SERIES AMONG LOW INCOME, POSTPARTUM WOMEN

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Background: Efforts to translate evidence-based weight loss interventions, such as the Diabetes Prevention Program (DPP), to low income, postpartum women are limited by poor intervention attendance and high attrition rates. Strategies that improve engagement and retention in this population are needed to maximize the reach of evidence-based weight loss interventions.

Purpose: To adapt a DPP-based weight loss intervention (Fresh Start) for Facebook delivery and to evaluate the feasibility of the Facebook-delivered intervention among low-income postpartum women through a series of three iterative pilot studies.

Methods: This study comprised of three single group pilot studies where feasibility outcomes iteratively informed changes from one pilot to the next. We paralleled the in-person program to Facebook delivery by translating the protocol to a content library to be delivered in a Facebook feed. Low income postpartum women were recruited from Women, Infants, and Children (WIC) clinics in Worcester, MA. Participants were enrolled into a 16-week weight loss intervention delivered entirely via Facebook. During the first eight weeks, Facebook intervention posts were delivered two times per day with additional coaching. For the following 8 weeks, posts were delivered once per day without additional coaching. Outcome measures were collected at baseline and 16-week follow-up and included changes in weight as well as feasibility outcomes including retention, engagement (defined by likes, comments, and posts), and acceptability.

Results: Pilot 1 ($n = 27$) had a retention rate of 89% and 62% engaged in the group during the 8-week coached phase. Mean weight loss was 2.6 pounds ($SD = 8.64$) and 75% reported being satisfied with the program. Pilot 2 ($n = 24$) had a retention rate of 83% and 55.2% engaged in the group during the 8-week coached phase. Mean weight loss was 2.5 pounds ($SD = 9.23$) and 80% were satisfied with the program. Pilot 3 ($n = 16$) had a retention rate of 88% and 67% engaged in the group during the 8-week coached phase. Mean weight loss was 7.0 pounds ($SD = 11.6$) and 64.3% were satisfied with the program.

Conclusions: Findings demonstrated that a Facebook-delivered intervention was acceptable and could be feasibly delivered to reach low-income, postpartum women. Future research is needed to evaluate the efficacy of a Facebook-delivered weight loss intervention compared to traditional interventions among low income, postpartum women.

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COMPARATIVE EFFECTIVENESS TRIAL OF AN OBESITY PREVENTION INTERVENTION IN EFNEP AND SNAP-ED: PRIMARY OUTCOMES

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The Expanded Food and Nutrition Education Program (EFNEP) and the Supplemental Nutrition Assistance Program-Education (SNAP-Ed) are USDA-funded nutrition education programs offered to low-income families which can provide an ideal platform for dissemination of obesity prevention interventions for young children. The current trial tested the comparative effectiveness of an adapted evidence-based obesity prevention intervention delivered through EFNEP and SNAP-Ed by trained peer educators versus the standard curriculum delivered by the programs. Data were collected on sociodemographic, anthropometric, and behavioral variables for children and parents at baseline and post-intervention (6 weeks). One-hundred fifty-three child-parent dyads were enrolled ($n = 103$ in the Intervention group; $n = 53$ in the Standard group). Children participating in the trial were 2–5 years old, 55% female, 37% African American and 36% Latino. Parent/caretaker ages ranged from 20–74 ($M = 34.4$; $SD = 9.2$), and 81% were mothers. Forty-one percent of the children and 69% of parents enrolled were overweight/obese. Retention at 6 weeks post-intervention was 86% for children (83% in the Intervention group and 92% in the Standard group) and 79% for parents (78% in the Intervention group and 82% in the Standard group). Random intercept mixed models comparing 6-week mean changes on anthropometric and health behavior variables between groups were tested adjusting for age, sex, race (white, other), parent's education (<high school, high school graduate, Bachelor's degree), parent's employment (full- or part-time, other), parent's marital status (married or living with partner, other), and SNAP participation in the last 6 months. There were no differences in the child BMI z-score by groups ($p = 0.27$). However, there were small, but statistically significant differences in parent BMI by group (mean BMI change Intervention group = -0.20 ; $SD = 0.10$; mean BMI change Standard group = 0.29 ; $SD = 0.15$; $p = 0.01$). There were improvements in child physical activity in the Intervention group versus the Standard, but these improvements were not statistically significant ($p = 0.13$). Although the trial was feasible, in that we were able to successfully train peer educators to deliver the obesity prevention intervention to both parents and children, parent participation and retention was challenging, even in well-known community settings. Results from this trial can inform future dissemination efforts of evidence-based programs for underserved families.

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DAILY EATING DURATION, MORNING VS. EVENING INGESTIONS, FOOD CHOICES, BINGEING, AND BMI: COMPARISON OF BOOMERS AND MILLENNIALS

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Recent research (e.g., Gill & Panda, 2015) has emphasized the importance of daily eating duration, morning vs. night eating, and time restricted feeding on healthy food choices and obesity management. The purpose of the present study was to extend our investigation of changes in binge eating prevalence to exploring time of eating using a standardized measure called the POES (“Periodicity of Eating and Sleeping”) scale, using undergraduate samples of “Baby Boomers” (1977, N=277, 198 females, 79 males) and “Millennials” (2004–2005, N=266, 203 females, 63 males; 2009, N=179, 104 females, 75 males) who completed the Binge Scale (BS), the Height-Weight Questionnaire, and two weekday and two weekend days of food diaries from which POES scores, food choices, numbers of meals and snacks, and self-statements were independently and reliably calculated by research assistants. These cross-sectional convenience samples were obtained by the first author at the same university over the different time periods. Although average daily eating duration (Median = 11 hrs) decreased slightly but significantly across the cohorts, it was not significantly associated with BMI, weight concern, or binge eating. Binge eating was reported more frequently by women than men, and Millennial women’s scores on the BS were significantly lower than Boomer women’s scores. Overall, students with an “owl” eating pattern (i.e., ingestions after 9 PM) (31% of the sample) consumed significantly more sugar drinks and sweets, and had more negative self-statements about what they ate, while those with a “lark” pattern (ingestions before 9 AM) (19% of the sample) ate significantly more fruits and veggies. Eating after 9 PM was significantly more prevalent for the 1977 “Boomer” cohort than the Millennial cohorts. Finally students who reported binge eating ate significantly more snacks, had higher POES scores on the Eating subscale, more negative self-statements, more ingestions after 9 PM, and ate more sweets compared with those who did not report any bingeing. We present a social ecological life contextual model that considers the possible contributions of both person factors (e.g., biological factors related to weight history and undergraduates’ changed attitudes about disordered eating as coping behavior) and contextual factors (e.g., changes in availability of nutritious food choices, eating environments, culture, and exercise options, particularly for women).

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DETERMINANTS OF INTENTIONS IN TAKING A DIRECT-TO-CONSUMER GENETIC TEST FOR THE OBESITY GENE: A TEST OF THE INTEGRATIVE MODEL

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Several studies have suggested that providing individuals with personalized genetic information helps to mediate changes in their behaviors and increase adherence to risk-reducing behaviors. Concurrently, advances in genetic testing technologies, such as next-generation sequencing, have dramatically reduced the cost and time of genetic testing, which makes direct-to-consumer genetic testing (DTC-GT) services more availability and affordability. There are a limited number of studies evaluating the attitudes consumers have toward taking a DTC-GT, and of the studies that have been published, few are rooted in a theoretical framework. The purpose of this study was to evaluate the determinants of DTC-GT for obesity related genes, using the Integrative Model of Behavioral Prediction (IMB). Overall, 291 college students completed an online survey evaluating each psychosocial construct related to the IMB (intentions, attitudes, perceived norms and perceived behavioral control (PBC)). Determinants of behavioral intentions (attitudes, perceived norms, and PBC) were evaluated using a linear regression model. Determinates of attitudes, perceived norms and PBC were evaluated using salient beliefs, which were derived from an elicitation study. Results showed that perceived norms ($\beta=0.614$), attitudes ($\beta=0.214$) and PBC ($\beta=0.121$) accounted for 64.2% of the variance of intentions, with perceived norms having the strongest influence on intentions. Pressure from a significant other or spouse was found to have the strongest association with perceived norms ($r=0.64$; $p=0.001$). The IMB appears to be an effective model for explaining students’ intentions for receiving a DTC-GT. Health practitioners should operationalize behavior change techniques and strategies that target the IMB’s core constructs, with special emphasis on perceived norms, using the salient beliefs evaluated in this study.

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EATING IN THE ABSENCE OF HUNGER RELATES TO LOSS-OF-CONTROL EATING, HEDONIC HUNGER, AND WEIGHT GAIN IN NORMAL-WEIGHT WOMEN

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Introduction: Eating when not in an energy deprived state likely contributes to weight gain, and in some cases, is a feature of disordered eating. Work on the concept of hedonic hunger suggests that there are individual differences in the strength of hedonically-motivated appetite in the absence of energy need. Measuring this behavior in normal weight individuals could help identify those at risk for weight gain and/or disordered eating behavior. The present study measured eating in the absence of hunger (EAH) and its relationship with weight change and self-report measures related to appetite and eating behavior.

Method: Participants were 46 normal-weight young women (M age = 21 years, M body mass index (BMI) = 22 kg/m²). Two-thirds of participants were selected to be at risk for weight gain, with above average body dissatisfaction, a history of dieting, and/or a baseline weight at least 5 lbs below their highest ever weight. EAH was assessed after a standardized lunch of pasta with pesto sauce consumed to self-reported fullness, and was defined as the total number of calories consumed from several salty and sweet snack foods. Participants also completed the Power of Food Scale, Eating Loss of Control Scale, Three Factor Eating Questionnaire – Disinhibition Subscale, and Dutch Eating Behavior Questionnaire – Emotional Eating Subscale, and their weights were measured at 0, 2, 4, 6, and 12 months.

Results: Participants consumed, on average, 188 calories in the absence of hunger ($SD = 140$, range 18 – 488 calories). EAH was positively associated with hedonic hunger ($p < 0.01$, $R^2 = 0.18$), loss of control eating ($p < 0.01$, $R^2 = 0.29$), and weight gain over two months ($p < 0.01$, $R^2 = 0.19$), controlling for baseline BMI. In contrast, EAH was unrelated to emotional eating, disinhibition, and longer-term weight change. Amount of the lunch entrée consumed was unrelated to weight change or self-report measures.

Conclusions: EAH, which previously has mainly been assessed in children, was significantly associated with short-term weight gain, drive to overconsume foods, and loss of control over eating in a sample of normal-weight young women. EAH appears to be a useful laboratory test to capture a propensity toward overeating in adults as well as children. EAH may be an important behavioral phenotype to identify young adults at risk for weight gain and/or disordered eating, and may be a target for intervention.

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HAPPY HOLIDAYS? INVESTIGATING THE RELATIONSHIP BETWEEN HOLIDAY SEASON AND BEHAVIORAL WEIGHT LOSS OUTCOMES

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Introduction: The winter holiday season (Thanksgiving to New Years') provides many potential barriers to weight control, evidenced by the average 0.5–1 kg gained during each holiday season by US adults. However, unknown is whether weight loss efforts are affected by these barriers when one attempts to engage in active behavioral weight loss (BWL) during this period. To address this gap, this study examined differences in weight loss (WL) between participants whose BWL treatment overlapped with the holidays and those whose treatment did not.

Methods: Adult participants with overweight or obese BMIs ($n=637$) were weighed at each treatment session during the initial weight loss period (0–6 months). ANCOVAs and multilevel modeling in R Studio were utilized.

Results: At six months there was a significant difference in percent WL between participants whose treatment overlapped with the holidays ($n=258$, $WL = 8.02\%$) and participants whose treatment did not ($n=379$, $WL = 10.60\%$), $F(1,633)=28.76$, $p<0.001$. Participants whose treatment overlapped with the holidays lost weight at significantly slower rates during the holiday season compared to those who treatment did not overlap. Exploratory analyses revealed that participants who encountered the holidays primarily during months 2–3 ($n=149$, $WL=9.04\%$) lost significantly more weight at 6 months as compared to participants who encountered the holidays primarily during months 5–6 ($n=109$, $WL=6.63\%$), $F(1,254)=12.22$, $p=0.001$.

Conclusions: Participants whose treatment overlapped with the holiday season during the first six months of BWL lost approximately 2.5% less weight as compared to participants whose treatment did not overlap with the holiday season, attributable to a slower rate of weight loss during the holiday season specifically. Additionally, reaching the holidays later in treatment was associated with the lowest weight loss, suggesting that the barriers present during the holiday season may be even more difficult to overcome as motivation or accountability decrease. Overall, additional resources are needed for managing the holiday season during BWL, such as additional self-monitoring, increased social support, and more specific planning. Future directions include randomizing treatment timing to determine if these differences are due to holiday-related barriers or due to participant characteristics that may affect choice of treatment timing.

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HEALTHY HABITS MEDIATE THE EFFECTS OF CONSCIENTIOUSNESS ON SUSTAINED WEIGHT LOSS MAINTENANCE

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Background: High levels of conscientiousness (e.g., the personality trait associated with self-discipline, orderliness, and adherence to social norms) have been shown to protect against excess weight gain, but less is known about how this trait affects successful weight loss maintenance or potential mechanisms that could be mediating this relationship. The purpose of this study will be to determine if daily health-related lifestyle choices (i.e. food quantity and temptations, consistent meal and sleep timing, exercise adherence, and psychosocial health and stress coping) mediate the relationship between conscientiousness and successful weight loss maintenance.

Methods: We recruited a national sample of participants ($N=954$) from Amazon's M-Turk crowdsourcing marketplace who indicated they had attempted to lose weight at least once over the past 3 years. Within this sample, 32.7% of participants ($N=312$) indicated they were successful at maintaining their weight loss for a year or longer. Conscientiousness was measured with the 60-item Cherynshenko Conscientiousness Scale and health behaviors were assessed with the 26-item Healthy Lifestyle & Personal Control Questionnaire that focused on five factors (dietary healthy choices, dietary harm avoidance, daily routines, organized physical exercise, social/mental balance). Direct and indirect effects of conscientiousness on successful weight loss maintenance were tested within a path model in Mplus v7.0 while accounting for demographic differences.

Results: High conscientiousness was significantly associated with being a successful weight loss maintainer ($\beta = .129$, $p < .000$). Additionally, greater daily health-related lifestyle choices was also significantly associated with successful maintainer status ($\beta = .364$, $p < .000$). Lastly, a significant indirect effect emerged where frequency of daily health-related lifestyle choices partially mediated the relationship between conscientiousness and successful weight loss maintenance ($B = .087$, 95% CI = .058 to .117).

Conclusions: Higher levels of conscientiousness were associated with an increased likelihood of maintaining successful weight loss for a year or more. Furthermore, this relationship was partially mediated by the frequency of daily healthy habits. Improving our understanding of how personality traits, and in particular conscientiousness, influence weight loss maintenance may allow for enhanced tailoring in future weight loss maintenance interventions.

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ONTRACK: CAN A SMARTPHONE-BASED JUST-TIME ADAPTIVE INTERVENTION IMPROVE WEIGHT LOSS OUTCOMES?

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Lack of success in weight loss programs can be largely attributed to dietary lapses, i.e., specific instances of in adherence to dietary recommendations. Lapses have been linked to a select group of internal and external cues, suggesting that lapse prediction and prevention are possible, given sufficient data. As such, we created an smartphone-based Just-in-Time Adaptive Intervention (JITAI) system called OnTrack that gathers lapse predictor data via repeated mini-surveys, uses machine learning to predict lapse behavior with increasing accuracy, and delivers tailored, interventions at moments of high risk that are designed to prevent lapses from occurring. In preliminary work, OnTrack's machine learning model has proven to have good predictive power, participants have rated interventions highly and have demonstrated decreases in lapses and weight. However, its incremental efficacy over and above an established weight loss program is unknown. As such, the current study (current $n = 57$; projected $n = 160$ by March) is randomizing overweight participants to receive either: the app-based Weight Watchers program alone (WW), or WW plus OnTrack (WW+OT). Preliminary data suggests an advantage of the WW+OT condition (Weight Loss $M=5.3\%$, $SD=4.1\%$) over WW ($M=4.4\%$, $SD=3.3\%$), but the number of completers ($n=16$) is not yet sufficient to perform statistical testing. Perceived effectiveness of OT was moderate (4.71/7) and equivalent to WW (5.68/10). However, ratings of specific OT intervention usefulness were low ($M=3.4/10$) for the initial set of 16 users. Follow-up interviews revealed that risk alerts did not feel personalized leading us to discover--and correct--algorithm errors. Overall, the first RCT of a dietary-lapse-focused JITAI is offering tentative support of its efficacy, though more reliable and complete results await the full 160 participants completing the trial.

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PARTICIPANT AND CLINICIAN PERCEPTION OF CHALLENGES DURING BEHAVIORAL WEIGHT LOSS TREATMENT

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Behavioral weight loss treatment has a strong focus on identifying factors that can make lifestyle modification challenging, yet information on perception of such barriers is limited. This is the first study designed to compare participant and clinician perceptions of weight control challenges, as well as the first to examine how clinician perceptions relate to weight loss concurrently and predictively. Behavioral weight loss participants ($n = 320$) were given a checklist of weight control challenges and asked to select the three factors most relevant to their weight control. Clinicians delivering this group-based intervention independently completed a checklist for each participant they treated, identifying the three challenges they perceived as most relevant to that specific participant's weight control. Checklists were completed at month 3. Weight was measured at months 0, 3, and 12; participants received 28 treatment sessions during this time. Kappa values indicated low rates of agreement between participants and clinicians, with the lowest agreement ($\kappa < 0$) for endorsement of hunger, support, or mood. Clinician endorsement of motivation, effort, nutrition knowledge, planning, or keeping track was associated with lower participant weight loss at 3 months (all $ps < .001$), while clinician endorsement of good tasting food ($p = .001$), support ($p = .04$), or social factors ($p < .001$) was associated with greater 3-month weight loss. These eight factors each initially predicted 12-month weight loss ($p < .05$), but were not significant once 3-month weight loss was added as a covariate. Participant endorsement of motivation ($p = .002$) or keeping track ($p = .001$) as a challenge was associated with lower 3-month weight loss, while endorsement of good tasting food was associated with greater weight loss ($p = .02$). Consistent with the pattern of clinician results, these items (as well as social factors) predicted 12-month weight loss ($ps < .05$), but were not significant once 3-month weight loss was covaried. In summary, clinician perception of what makes weight control challenging for a given participant was typically inconsistent with that participant's understanding of his or her weight control challenges, but was strongly associated with weight loss. Future research should explore whether treatment efficacy might be improved if clinician or participant perceptions were shaped to have greater consistency. Further research on participant phenotypes also is warranted.

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PARTICIPANT EXPECTATIONS OF A WEIGHT LOSS PROGRAM: A MULTI-METHOD APPROACH

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Millions of people in the US would benefit from lowering their weight through weight management programs, yet little is known about their expectations of such programs beyond weight loss itself. This project used a multi-method approach to answer the following research questions: what do participants expect to gain from participating in a weight management program, how do expectations differ across BMI status, and across weight loss outcomes? Participants were selected from a 2-year weight management program run through the state of WV Public Employees Insurance Agency. Two methods were used in addressing participant expectations: 1) quantitative analysis of baseline survey responses, and 2) qualitative analysis of interviews conducted with participants after completing 18-months in the program. The first method analyzed responses from a baseline survey that asked participants to list "what do you hope to get out of the program?" The following themes were created from analyzing participants responses: weight loss, improved appearance, improved family time, improved health, improved lifestyle, improved mood, and education. Responses were quantified across 1,339 participants by coding 1 for the presence of each theme. An ANOVA found significant differences in response frequency across BMI classes for general health $F(3, 1332) = 8.65, p < 0.00$; improved family time $F(3, 1,332) = 7.49, p < 0.00$; and appearance $F(3, 1,332) = 5.01, p < 0.01$. Post-hoc analysis revealed that participants of all 3 obesity classes were more likely to expect health improvements than those who were overweight (BMI 25–29.9); those with class III obesity (BMI >40) were more likely to expect improved family time than those who were overweight or class I obese (BMI 30–34.9); and individuals with class III obesity were less likely to expect improved appearance when compared to overweight participants. The second method involved 22 interviews focused on understanding participants' expectations and their strategies for measuring progress after completing at least 18-months of the program. Thematic analysis of the transcripts revealed 6 expectations: weight loss, improved fitness, improved health, improved mood, advice, and support to develop new habits. Participant measurement themes were related to expectations (e.g. measuring weight). Finally, a comparison of responses across three subgroups of weight success at 18-months (regained weight, lost 3–6%, and lost over 7%) revealed an increased number of participants focused on mood improvement in the groups that lost weight. In conclusion, both methods revealed a rich and diverse range of expectations, beyond just weight loss, and evidence points to expectations differing across BMI classes. Further implications of these results for practitioners and program development will be discussed.

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RECRUITING HISPANIC ADULTS FOR A FEASIBILITY AND ACCEPTABILITY BEVERAGE INTERVENTION

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Background: Hispanic adults have a higher prevalence of obesity-related comorbidities and related metabolic abnormalities relative to other racial/ethnic groups in the U.S. The consumption of select beverages (i.e. green tea and Mediterranean lemonade) rich in bioactive dietary constituents may modify lipids, insulin/glucose and hemoglobin A1c in this at-risk group. Sparse research has assessed if Hispanic adults can be efficiently recruited into beverage intervention studies.

Purpose: To evaluate recruitment strategies for engaging obese Hispanic adults into a beverage intervention focused on examining changes in cardiometabolic health.

Methods: Fifty Hispanic adults (18–64 years; BMI ≥ 30 kg/m²) were recruited for an 8-week randomized, controlled beverage intervention study of three beverages: Mediterranean lemonade, Green Tea, or flavored water control. Face-to-face recruitment efforts occurred at a swap meet, community health clinics, worksites, and governmental facilities frequented by the Hispanic community in Tucson, AZ. Family/friend referrals, printed advertisements, and social media comprised additional outreach efforts. Recruitment effectiveness was determined by the number of adults who enrolled in the study relative to those who expressed interest, participated in screening, and were eligible.

Results: Recruitment took place over 6 months. A total of 287 Hispanic adults expressed interest in participating in the study, of which 222 (age: 43.4 ± 10.3 yrs; BMI: 33.0 ± 6.3 kg/m²; 21% male) completed screening for eligibility. Face-to-face recruitment yielded the most participants (86%; n=192) with the swap meet alone yielding 44% (n=97) followed by worksites (18%; n=40), community health clinics (17%; n=37), and government facilities 8% (n=18). Family referrals (8%; n=18), online outreach (3%; 6) and response to flyers (3% n=6) comprised the remainder of participant screenings. In total, 46% (n=102) of those screened were eligible for the study; the primary reason for ineligibility was self-reported BMI.

Conclusions: Face-to-face recruitment in community settings appears to be an effective strategy to engage this underrepresented group in research given the yield of interested participants deemed eligible. Efforts to evaluate this approach targeting other racial/ethnic groups and health behaviors are needed.

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SOCIAL CAPITAL AND OBESITY AMONG ADULTS LONGITUDINAL FINDINGS FROM THE MONTREAL NEIGHBOURHOOD NETWORKS AND HEALTHY AGING PANEL

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Curbing the worldwide increase in obesity requires upstream social interventions that modify the environment in which obesity emerges. Recent studies have suggested that social capital and networks may influence a person's risk of obesity. Yet, few longitudinal studies have assessed whether social capital and networks reduce obesity risk in adult populations. In this study, the analytical data come from three waves (2008, 2010, and 2013) of the Montreal Neighborhood Networks and Health Aging Panel (N = 2606). Self-reported height and weight were used to calculate body mass index (BMI) with obesity defined as a BMI >30. Name and position generator instruments captured network measures of social capital, including: (1) upper reachability, (2) range, (3) diversity and (4) the number of kin ties. Questions on generalized trust and participation were used to assess cognitive and structural dimensions of social capital. Separate random effects logistic regression was used to examine the association among social network characteristics, social capital, and obesity. We found the greater the number of kin ties in a person's network, the greater the risk of obesity (OR: 1.33, 95% CI: 1.08 – 1.62). Adults with higher network diversity (OR: 0.83, 95% CI: 0.72 – 0.96) and high generalized trust (OR: 0.52, 95% CI: 0.35 – 0.77) were at a lower risk of obesity. The current study confirmed that higher network capital and trust were protective against obesity, while having kin ties was not. Disentangling the multidimensional role that social capital plays can lead to more effective interventions to reduce obesity.

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THE ANIMO STUDY: A GENDER- AND CULTURALLY-SENSITIVE WEIGHT LOSS INTERVENTION FOR HISPANIC MALES

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Background: Hispanic males have the highest rates of overweight and obesity compared to males of other racial/ethnic groups. While weight loss can significantly reduce obesity related health risks, Hispanic males are grossly underrepresented in weight loss research. Our work addresses a critical gap by informing how tailored intervention strategies improve weight management in this health disparate population.

Purpose: This pilot randomized controlled study compared a 12-week gender- and culturally-sensitive weight loss intervention (GCSWLI) to a waist-list control (WLC) in sedentary, overweight/obese Hispanic males.

Methods: Fifty Hispanic males (age: 43 ± 11 years; BMI: 34 ± 5 kg/m²; 58% Spanish monolingual) were randomized to one of two groups: GCSWLI (n=25) or WLC (n=25). GCSWLI participants attended weekly in-person individual sessions guided by a trained bilingual Hispanic male lifestyle coach, were prescribed a daily reduced calorie goal with a specific focus on reducing/modifying the types of food and liquids consumed (e.g., alcohol/sugar sweetened beverages), and 225 minutes of moderate-intensity physical activity (PA) per week. Additional GCSWLI features included a free gym membership and optional spouse/significant other attendance at intervention sessions. The WLC were asked to maintain their usual dietary intake and PA habits during the 12 weeks. GCSWLI participants continued with 12 weeks of follow-up including bi-weekly phone calls. Estimates of weight lost were obtained using a linear mixed effects model with categorical time and random intercepts.

Results: Between June-August 2016, 143 men expressed interest in participation; 35% (n=50) completed baseline measures and were randomized. Forty-three of 50 participants completed 12-week assessments, an overall attrition rate of 14% (GCSWLI: n=5, 20% vs. WLC: n=2, 8%). At week 12, using intention-to-treat, the mean weight loss in the GCSWLI was -6.3 kg (95% CI [-8.4, -4.1]) compared to -0.8 kg (95% CI [-2.8, 1.2]) for WLC (difference = -5.5 kg, 95% CI [-7.6, -3.4], $p < 0.001$). At week 24, weight loss in the GCSWLI was maintained (-6.4 kg, 95% CI [-8.6, -4.3]).

Conclusion: The GCSWLI appears to be a feasible strategy to engage Hispanic males in weight loss/management. Our pilot study indicates preliminary evidence of efficacy, though due to the small sample size, confirmation of these findings are needed in a larger study.

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THE QUALITY OF NUTRITION AND PHYSICAL ACTIVITY ENVIRONMENTS OF CHILD CARE CENTERS IN THREE SOUTHERN STATES

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Purpose: In early childhood when diet and physical activity (PA) behaviors are established, a significant proportion of U.S. children attend child care. Little is known about the nutrition and PA environments of child care centers in the south, where child obesity levels are highest. This study assessed the quality of nutrition and PA environments of child care centers in three southern states and examined differences by rural versus urban location, participation in the Child and Adult Care Food Program, and Head Start status.

Methods: The sample included 354 centers that enroll children aged 2–5, including 97 centers from Mississippi, 103 from Kentucky, and 154 centers from Georgia. Center directors and preschool teachers completed the Environment and Policy Assessment and Observation self-report tool (EPAO-SR) that assesses nutrition and PA environments of child care centers. Items on the tool were scored to capture six nutrition domains (foods provided at lunch, beverages provided at lunch, feeding environment, feeding practices, nutrition training/education, nutrition policy) and five PA domains (active play opportunities, outdoor play environment, PA practices, PA training/education, PA policy). The domains were then summed to create a combined nutrition and PA score (range=0–45); higher scores indicated that a greater number of best practices were met, which translated to higher-quality environments. Data analysis was performed in SAS and statistical significance was set at $p < 0.05$.

Results: Fifty-nine percent were rural centers versus 41% that were urban. Seventy-five percent participated in the Child and Adult Care Food Program, 73% received child-care subsidies, and 23% were Head Start centers. Overall, the centers had an average combined nutrition and PA score of 23.62 (± 4.70) out of 45. These scores did not differ between rural and urban centers (mean=23.51 \pm 4.85 versus 23.78 \pm 4.50, $p=0.60$). However, centers in the Child and Adult Care Food Program had higher nutrition and PA environment scores than non-participating centers (mean=24.18 \pm 22.06 versus 22.06 \pm 4.61, $p < 0.01$).

Conclusions: Findings highlight the vital role of federal programs play in supporting healthy nutrition and PA in child-care. Efforts are needed to increase enrolment in the Child and Adult Care Food Program. Providing nutrition and PA training and technical assistance to centers might also help.

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TIME-VARYING DISTRESS TOLERANCE AND ITS ROLE IN PROBLEMATIC EATING BEHAVIOR: A STUDY USING ECOLOGICAL MOMENTARY ASSESSMENT

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A growing body of literature supports the maintaining role of distress tolerance (i.e., the ability to withstand negative affect) in dysregulated eating behaviors that contribute to overweight, obesity, and binge eating. However, extant literature is fraught with limitations including: (1) reliance on retrospective self-report, and (2) the assumption that distress tolerance is a trait, rather than state (i.e., time-varying), construct. Using ecological momentary assessment is one method for addressing these limitations. In an ongoing study, treatment-seeking adults with clinically significant loss-of-control (LOC) eating ($n=15$, projected $n=20$) completed a smartphone-delivered EMA protocol for two weeks. Six times per day, participants answered questions regarding their current levels of negative affect, distress tolerance, and degree of LOC eating. We used generalized linear models and generalized estimating equations to examine: (1) time-varying nature of momentary distress tolerance; (2) ability of distress tolerance at time 1 (T1) to predict episodes of LOC at time 2 (T2); and (3) interaction between momentary negative affect and distress tolerance at T1 in predicting LOC at T2. We found distress tolerance, on average, decreased throughout the day, even when accounting for negative affect ($p = .03$). T1 distress tolerance did not significantly predict T2 LOC ($ps > .05$). At lower levels of momentary distress tolerance, feeling more guilty, bored, or sad was associated with later LOC eating ($ps = .01-.04$). Overall, our results support the value of assessing distress tolerance on a momentary level, as it may be a state, rather than trait variable. Additionally, it appears to moderate the prospective relation between negative affect and binge eating. Targeting distress tolerance in treatment may be beneficial in preventing LOC episodes (and therefore reducing risk for overweight, obesity, and continued binge eating) increasing a patient's ability to tolerate uncomfortable feelings, especially boredom, guilt or sadness. Future research should further examine the role of emotion-specific distress tolerance in dysregulated eating behavior.

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WEIGHT CHANGE MEDIATES CHANGE IN DEPRESSION: RESULTS FROM THE TRACK STUDY

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Depression remains one of the most disabling mental illnesses in the United States, particularly for low-income communities who lack access to treatment. Obesity and depression are frequently comorbid, resulting in compounded risk of cardiovascular disease. Behavioral weight loss programs have demonstrated reductions in depression, but it is currently unknown whether amelioration of depressive symptoms is due to weight reduction or simply time and attention. We investigated the mediating effect of weight reduction on change in depressive symptoms in a behavioral weight control program.

The Track program was delivered within a network of community health centers in North Carolina. Participants ($n=351$) received 1 year of behavioral weight loss treatment delivered digitally. Treatment included automated weekly self-monitoring prompts via mobile technologies, daily self-weighing, and counseling calls from registered dietitians; half of participants received enhanced usual care. Depression was measured using the PHQ-8 at baseline and 12 months. Anthropometric measurements were collected in clinic.

Participants were 68.1% female and 50.7 (SD = 8.9) years old, with a mean BMI of 35.9 (SD = 3.9) kg/m². Participants who received the intervention lost significantly more weight than the control group (adj. $M_{diff} = -3.8$ kg; 95% CI, -5.1 to -2.5 kg; $p < .0001$). There was no significant effect of intervention group on change in depression; both groups experienced significant reductions in depression (intervention: $p < .001$; control: $p = .004$). In those who received the intervention, there was a significant effect of weight change on depression, such that those who lost more weight showed greater reduction in depressive symptoms [$F(6,148) = 23.73$, $p < .001$].

Weight losses were dichotomized to assess differential depression change when comparing those who lost any weight to those who maintained or gained weight. Participants in the intervention group who maintained or gained reported an increase in depressive symptoms ($M=.3$, $SD=4.4$) while those who lost weight reported a decrease in depressive symptoms ($M=-1.8$, $SD=3.9$; $p=.011$). Mediation analyses revealed that the effect of intervention status on depression is mediated by weight change ($b = -.56$, $SE = .17$, 95% CI = $-.94, -.27$).

Digitally-delivered behavioral weight control can reduce depressive symptoms, but this effect is mediated by successful weight loss. Future work should investigate the clinical significance of this reduction in depression and assess whether depressive symptoms continue to remit in the event of weight regain.

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WHO ARE THE SUPERTRACKERS? UNDERSTANDING PREDICTORS AND OUTCOMES OF ENGAGEMENT IN A DIGITAL HEALTH WEIGHT LOSS INTERVENTION

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Objective: Self-monitoring engagement is the most reliable predictor of weight loss. The most successful interventions are those that help participants become “supertrackers;” those who consistently engage in self-monitoring throughout the intervention. Yet, we know little about who is most likely to achieve supertracker status, particularly among low-income groups. The current analysis examines predictors and weight outcomes of supertrackers among patients enrolled in a digital health weight loss intervention (Track) within community health centers.

Methods: We conducted a 12-month randomized controlled trial comparing the Track intervention to usual primary care for weight loss. The intervention included weekly self-monitoring of diet and physical activity goals via automated text messages or interactive voice response calls, daily self-weighing via a connected e-scale, and 18 counseling phone calls with a dietitian. Using data from our intervention platform, we operationalized self-monitoring engagement as proportion of days or weeks in which participants self-monitored behavioral goals and weight. Supertrackers are participants that tracked behaviors for at least 80% of weeks and weighed at least 5 days per week over 12 months.

Results: Intervention participants (n=170) were on average 50.9 years old and obese (BMI: 36.0 kg/m²). Most were female (69%) and non-Hispanic Black (54%), and 53% had an income ≤ \$25,000/y. Intervention participants completed a median of 93.2% (IQR: 54%-100%) of weekly self-monitoring and weighed on average 2.9 (2.0) days/week; 25% of participants (N=43) were supertrackers. Supertrackers lost significantly more weight at 12 months compared to those who tracked less often [mean difference: -4.6kg (95%CI: -7.0, -2.4); p=.0001]. There were no baseline differences in supertracker status by gender, race/ethnicity, employment, marital status, education, income, use of social services, diagnoses of hypertension, diabetes, or depression, stress, quality of life, smartphone ownership or use of health apps. However, at baseline, a greater proportion of supertrackers were more likely to have high levels of obesity (>35 kg/m²) [70% vs 51%; p=.034] and be weighing at least weekly [42% vs 21%; p=.008] compared to those who tracked less often.

Conclusions: The Track intervention achieved high levels of engagement, and only a limited number of factors predicted supertracker status. This suggests that high engagement can be achieved for most groups. It remains evident, however, that high levels of self-monitoring lead to significantly greater weight losses. Continued efforts to boost engagement rates are needed.

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FOCUS GROUPS TO INFORM THE DEVELOPMENT OF A NUTRITIONAL INTERVENTION IN THE FIRE SERVICE

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Cardiovascular disease (CVD) is the leading cause of on-duty deaths among US firefighters. A poor diet and firehouse traditions of large portion sizes, second helpings and leftovers contribute to obesity, which is steadily increasing in the fire service and is strongly associated to CVD. Because most risk factors are modifiable through lifestyle and firefighters spend a significant amount of time together in the firehouse, including time spent preparing and consuming meals and snacks, a worksite intervention trial was designed to encourage adoption of the Mediterranean-style diet. Prior to the start of the trial focus group sessions were conducted to assess firefighter and firefighter spouse/partner's perceptions toward food and nutrition behaviors and inform the “Feeding America’s Bravest” worksite intervention trial. Specifically we wanted to learn about: (1) perceptions and behaviors toward food and nutrition behaviors, (2) current attitudes and beliefs toward a healthy diet and lifestyle, (3) platforms for learning (4) key obstacles to eating a healthy diet and (5) willingness to change to a Mediterranean eating style from a sample of firefighters and their spouses or partners (hereafter referred to as “partners”).

Four semi-structured focus group discussions (2 firefighter and 2 partner), facilitated by a trained moderator, were held at a professional research center in Indianapolis, Indiana. A purposive sampling process was used to ensure that groups contained both sexes, a geographic distribution of firefighters from the department, and a mix of length-of-service. Participants were recruited one at a time until a group was full. The goal of the selection process was to select 11 participants and seat 8. Transcripts were coded and analyzed via content and thematic analyses. The results revealed that firefighters (mean age = 47, n=17) and their spouse/partners (mean age=46, n=16) report that their eating behaviors and food choices were predominantly affected by schedules, firehouse tradition (such as large portion sizes, volume of food, desserts and snacks, leftovers), quality of life (general sense of well-being), and cost of food. These findings inform that fire service nutrition interventions need to consider family and firefighter work schedules and cultural expectations of the fire service (timing, portion size, meal structure, quantity and content). Tools and resources to improve diet should minimize cost and maximize time.

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THE IMPACT OF INJUSTICE APPRAISALS ON PAIN AND PSYCHOSOCIAL OUTCOMES IN AN INPATIENT SPINAL CORD INJURY REHABILITATION PROGRAM

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Perceived injustice -- belief that one's pain/injuries are undeserved and attributable to error or negligence--has been found predictive of negative physical and psychosocial outcomes following acute injury and in the context of chronic health conditions. Individuals who sustain spinal cord injury (SCI) face multiple physical and psychological challenges that may contribute to injustice appraisals; however, to date, almost no studies have addressed the role of injustice perception following SCI. The current study examined the relationship between injury-related injustice perception and physical and psychosocial outcomes among patients receiving inpatient rehabilitation following recently acquired SCI. Of the sample ($n=77$; 24 female; mean age = 48.1 years), 45 sustained cervical and 28 sustained thoracic-level injuries, respectively. In addition to injury-related and sociodemographic variables, participants completed measures of current pain intensity, perceived disability across life domains following discharge, and depressive symptomatology. Perceived injustice was significantly positively associated with perceived disability ($r = .44$), depressive symptoms ($r = .41$), and current pain report ($r = .23$, marginal). In regression analyses, level of perceived injustice significantly accounted for variance in level of perceived disability and depression beyond that accounted for sociodemographic variables, type of injury (cervical/thoracic, traumatic/nontraumatic) and pain intensity. The study is among the first to examine the role of injustice appraisals in the context of SCI as well as inpatient rehabilitation for major trauma. Findings are consistent with existing evidence regarding the deleterious impact of elevated injustice appraisals across a multiple pain/injury conditions (e.g., whiplash, fibromyalgia, chronic musculoskeletal pain) and suggest that interventions targeting injustice appraisals and related psychological factors (e.g., blame, anger) may be warranted following SCI. Future studies are encouraged to examine the longitudinal impact of injustice cognitions following acute SCI hospitalization and rehabilitation.

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ASSOCIATIONS BETWEEN MINDFULNESS, DEPRESSION, AND ANXIETY SYMPTOMS IN PEOPLE WITH MIGRAINE

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Objective: Migraine is a painful, prevalent, and disabling neurologic condition that is comorbid with both depression and anxiety. Higher depression and anxiety symptoms have been associated with poor quality of life, disability, and disease severity in people with migraine. Mindfulness techniques have been shown to reduce depression and anxiety symptoms in other populations. The purpose of the present study is to determine if mindfulness is associated with depression and anxiety symptoms in people with migraine.

Method: Thirty-eight (35 woman, 3 men; M age = 39.7, $SD = 14.2$; 86.8%, $n = 33$ Caucasian, non-Hispanic; 89.5%, $n = 34$ with a college graduate degree or higher) people with migraine recruited from flyers and neurology offices in a large urban area were recruited to participate in a randomized clinical trial to evaluate Mindfulness-Based Cognitive Therapy for migraine. Participants completed a series of baseline questionnaires, including the PROMIS Depression and PROMIS Anxiety measures to assess depression and anxiety symptoms, and the Five Facet Mindfulness Questionnaire (FFMQ) to evaluate mindfulness. The FFMQ includes five subscales: observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. Pearson correlations evaluated relationships between depression and anxiety symptoms, and the FFMQ subscales.

Results: In this sample, participants demonstrated broadly average levels of depression symptoms ($M = 53.8$, $SD = 6.7$) and anxiety symptoms ($M = 56.7$, $SD = 6.8$). FFMQ total scores were not significantly associated with depression symptoms ($p = .115$) or anxiety symptoms ($p = .124$). However, higher scores on the non-reactivity to inner experiences subscale were associated with lower depression symptoms ($r = -.34$, $p = .041$), and higher scores on the non-judging of inner experiences subscale were associated with lower anxiety symptoms ($r = -.33$, $p = .049$).

Conclusion: These findings suggest that certain components of mindfulness may be associated with psychiatric symptoms in people with migraine. Specifically, non-reactivity was associated with lower depression symptoms, and non-judging was associated with lower anxiety symptoms in people with migraine. Future studies should continue to evaluate the impact of mindfulness components on psychiatric symptoms and other outcomes in people with migraine.

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CLASSIFYING CHRONIC PAIN PATIENTS BY VALUES AND ACCEPTANCE

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Pain acceptance and values-based action are two interconnected behavioral processes that appear important to the treatment of chronic pain. Both are emphasized in Acceptance and Commitment Therapy (ACT)—an empirically supported treatment for chronic pain. Acceptance entails engaging in activities despite pain and refraining from impractical attempts to avoid pain. Value-based action means acting in alignment with verbally stated meaningful purposes and is most effectively pursued with acceptance. The present study explored the interconnectedness of acceptance and values in a sample of individuals with chronic pain ($n = 1196$) by using latent profile analysis to determine if meaningful sub-groups (classes) of individuals can be identified based on measures of pain acceptance and values-based action. Analyses indicated that a three-class solution was optimal, which included a class high in both acceptance and values, low in both acceptance and values, and a values discrepancy group, which was characterized by low acceptance and large discrepancy between values importance and success. Significant differences were observed between the classes across measures of pain, fear avoidance, depression, and physical and psychosocial disability. Overall, the high acceptance and values class had the highest levels of functioning and the values discrepancy class had the lowest levels, with the low acceptance and values group falling in the middle. By evaluating both acceptance and values-based action together, the interconnectedness of these processes is better understood and their importance to ACT is further supported.

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EXAMINING THE RELATIONSHIP BETWEEN DRIVING OUTCOMES AND PERCEIVED INJUSTICE AMONG INDIVIDUALS WITH CHRONIC LOW BACK PAIN

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Studies consistently link elevated pain-related injustice perception with poor physical and psychosocial outcomes among individuals with acute injury or chronic musculoskeletal pain. Perceived injustice has been conceptualized as a cognitive appraisal reflecting the severity and irreparability of pain/injury-related loss, as well as externalized blame and unfairness. There is likewise strong theoretical and empirical support for the relationship between anger and injustice appraisals. Recent research has highlighted the deleterious impact of perceived injustice specifically among individuals with chronic low back pain (CLBP), which is among the most prevalent and disabling pain conditions in the US and worldwide. Given the well-established association between anger and problematic driving outcomes, the current study sought to examine the relationship between perceived injustice, anger-related variables, and driving outcomes among individuals with CLBP ($n=315$; 159 female, Mean age = 35.16 years). Participants completed the Injustice Experience Questionnaire (IEQ) with reference to their CLBP, and measures of recent anger experience, characteristic anger responses while driving, and the extent to which their back pain exacerbated anger responses while driving. Participants also completed standard measures of driving errors/violations associated with collision involvement. In line with previous findings, individuals who endorsed higher CLBP-related injustice perception reported higher average pain intensity, pain-related disability (p 's < .001), and recent anger (p < .001). Higher perceived injustice ratings likewise showed significant positive association with both characteristic driving-related anger and anger responses when driving in pain (p 's < .001). Critically, higher injustice and anger scores were associated with more driving errors/violation and higher incidence of collision. Given the prevalence of CLBP and central role of driving behavior in both daily function and possible injury, the current preliminary analyses support the value of further examining the association between pain-related anger, injustice appraisals and driving-related outcomes.

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EXPLORING THE ROLE OF PAIN CATASTROPHIZING IN DRIVING BEHAVIOR AMONG INDIVIDUALS WITH CHRONIC LOW BACK PAIN

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Chronic low back pain (CLBP) is among the most prevalent, disabling, and costly conditions worldwide. Recent research has found that, in addition to traditionally-examined domains of daily living, individuals with CLBP report significant pain interference in driving-related activity. Although driving represents one of the most common and instrumental daily activities in the United States, few studies to date have examined the interface between chronic musculoskeletal pain and driving experience. In the context of CLBP, prior research has supported that pain catastrophizing – a negative orientation to pain experience characterized by pain magnification, rumination, and helplessness – contributes to negative physical and psychological outcomes through such mechanisms as maladaptive attentional bias toward pain. The current study examined the association between pain catastrophizing and driving-related physical and psychological outcomes among 315 participants with CLBP (159 female, Mean age=35.16 years, SD=10.52). Participants rated the extent to which driving exacerbated their current pain intensity as well as the extent to which pain while driving increased their distractibility, impatience, and irritability at other drivers and passengers. Collisions during the previous three years were also recorded. Participants completed the Pain Catastrophizing Scale (PCS) and Experience of Cognitive Intrusion of Pain Scale (ECIP; adapted to driving) -- previously associated with pain catastrophizing. In line with existing research, participants with higher PCS scores reported higher average pain intensity and disability/daily pain interference (r 's=.26-.85, all p 's < .01). Higher PCS scores were also associated with greater pain experience while driving as well as greater increase in negative affective/behavioral responses (distractibility, impatience, irritability) when driving in pain (r 's=.37-.50, all p 's < .01). Notably, higher pain catastrophizing was significantly positively associated with cognitive intrusions by pain while driving (r = .80, p < .01). Further, analyses revealed that, in comparison to participants without a collision history, participants who had experienced a vehicle collision in the past three years reported higher pain catastrophizing and cognitive intrusions by pain when driving. Current findings highlight the potential mechanisms by which pain cognitions and attentional capture may contribute to heightened risk conditions when driving.

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MULTI-SCALED MEASURES OF PAIN EXPERIENCE IN YOUNG ADULTS WITH SICKLE CELL DISEASE

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Daily experience of pain can lead to long-term disability, particularly for individuals with Sickle Cell Disease (SCD). Inheritance of this genetic disorder leads to changes in hemoglobin causing the stiffening and distorting of red blood cells into the shape of "sickles". This sickling blocks or partially restricts blood flow to different parts of their bodies, resulting in both chronic and acute pain. Current developments in mobile technology provide new tools for understanding and managing SCD pain outside the clinical setting, where characteristics of pain can be captured using self-report measures administered using mobile applications on patients' smart phones. However, self-report can be burdensome for patients and have potential iatrogenic effects. Mobile technology can capture characteristics of pain experience through the passive recording of physiological measures including movement and heart rate variability. Therefore, this project aimed to capture these passively recorded physiological signals across different reported pain intensities in order to identify measures that can be used as indicators of SCD pain experience. Four young-adult patients with SCD recruited from Cincinnati Children's Hospital Medical Center wore wristbands that recorded their heart rate, skin conductance, temperature, and movement (accelerometer data) for four consecutive days. They also used a mobile application to report their pain intensity, pain location, pain descriptors, happiness, stress and fatigue. The pattern-recognition techniques of machine learning were used to identify regularities in the physiological signals in relationship to the reported pain intensities. For example, statistical features from sliding windows of the accelerometer data were extracted to build personal models to predict the pain intensity for each patient. The Linear Regression, Multi-layer Perceptron and Random Forest classification algorithms significantly predicted pain intensity for two of the four patients. Future work will focus on the development of mobile health interventions that can leverage changes in physiological signals to provide adaptive support for pain management that is responsive to the momentary needs of individuals with SCD within their everyday lives.

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PRE-SURGICAL BIOPSYCHOSOCIAL CORRELATES OF LUMBAR FUSION OUTCOMES AMONG UTAH WORKERS' COMPENSATION PATIENTS

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Lumbar fusion surgery is an increasingly prevalent and costly procedure in the U.S. Outcomes following this surgery can be quite variable. There has been an effort to identify pre-surgical biopsychosocial variables that may predict lumbar fusion outcomes. Identification of such variables are particularly important for informing patient screening and selection procedures. The present purpose was to examine how pre-surgical demographic, health status, and compensation variables correlated with post-surgical outcome variables. Participants were 110 Utah workers' compensation patients (average age = 42.7 yrs., 77.3% male) who underwent lumbar fusion surgery from 1987–2007 and were at least two-years post-surgery at time of follow-up. A retrospective cohort design was utilized consisting of a review of pre-surgical records and a postsurgical telephone survey. Presurgical variables included: age at time of injury, number of levels fused, smoking status, amount of pain prior to surgery, depression history, assignment to a nurse case manager, and litigation status. The outcome measures were assessed at least 2-years post-surgery and included disability status, Roland-Morris Disability Questionnaire (RMDQ) total score, and Short-Form-36 Physical and Mental Health Composite Scores (PCS/MCS). Correlational analyses revealed that smoking, higher amount of pain prior to surgery, depression, assignment of a case manager, and litigation were all consistently statistically significant correlates of outcomes. Linear regressions were conducted in which pre-surgical variables were used to predict outcomes. Statistically significant amounts of variance were accounted for in disability status ($R^2 = 0.21$), RMDQ total ($R^2 = 0.26$), SF-36 MCS ($R^2 = 0.19$) and SF-36 PCS scores ($R^2 = 0.31$). The benefits of integrating pre-surgical predictors of outcomes into lumbar fusion patient selection protocols are discussed.

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PSYCHIATRIC HISTORY, OPIOID USE, PAIN, AND POST-OPERATIVE OUTCOMES IN LIVING KIDNEY DONORS

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Psychiatric characteristics such as depression and anxiety predict worse post-surgical pain severity and management. This study of living kidney donors (LDs) explores the effect of psychiatric history on opioid medication use, subjective pain, length of stay (LOS), and post-donation emergency department (ED) visits. These relationships were studied in LDs undergoing traditional peri-operative pain management (pre-ERAS group; n=86) and in LDs with an enhanced recovery after surgery (ERAS; n=10) protocol to reduce opioid use in all care phases. LDs in both groups (n=96, age_{yr} = 45.3, 55.2% female, 72.9% Caucasian) underwent standard medical, surgical, psychological and social assessment. Total morphine milligram equivalents (MME) per stay was significantly higher in the pre-ERAS group ($M=256.7$, $SD=140.2$) compared to the ERAS group ($M=153.2$, $SD=88.9$); $t(94)=2.3$, $p=0.25$. The ERAS group had significantly shorter LOS ($M=3.5$ days, $SD=.53$) than the pre-ERAS group ($M=4.4$ days, $SD=.99$); $t(94)=2.9$, $p=.004$. There was no difference in pain ratings between the groups; $t(94)=.79$, $p=.43$. For both groups, pain explained a significant proportion of variance in LOS [$R^2=.18$, $F(1, 94)=20.24$, $p < .001$], with higher pain associated with longer LOS; $B=.24$, $t(94)=4.5$, $p<.001$. 9 of 86 (10.5%) pre-ERAS LDs required ED treatment for pain within 2 weeks after discharge, compared to 0 ERAS donors. LOS explained a significant amount of variance in post-donation ED treatment [$R^2=.05$, $F(1, 94) = 4.62$, $p<.05$, with greater LOS associated with more ED visits; $B=.10$, $t(94)=2.2$, $p<.05$. LDs with a psychiatric history (21.9% of overall sample) had the same LOS compared to LDs without such history ($M=4.3$ days). LDs with a psychiatric history did not have significantly higher pain ($M=7.1$ highest pain, $SD=1.6$) than those without a psychiatric history ($M=7.7$ highest pain, $SD=1.7$); $t(94)=1.4$, $p=.16$, and also did not have more post-donation ED visits; $t(94)=-.77$, $p=.45$. LDs with a psychiatric history did not receive more MME ($M=228.31$, $SD=94.6$) compared to LDs with no psychiatric history ($M=250.9$, $SD=149.4$); $t(94)=.66$, $p=.51$. Results showed that carefully screened donors with a psychiatric history had no differences in outcomes than donors without a psychiatric history. Higher pain was associated with longer LOS, with longer LOS related to more post-surgical ED visits. Preliminary findings indicate successful shortening of LOS and reduced opioid use after implementation of ERAS.

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RACE AND SEX DIFFERENCES IN PAIN SENSITIZATION AMONG PATIENTS WITH CHRONIC LOW BACK PAIN

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There is evidence that chronic low back pain (CLBP) involves changes in the CNS resulting in pain augmentation. Further, race and sex disparities in the prevalence and experience of low back pain may be related to differences in pain sensitization. Catastrophizing may also influence pain sensitization in CLBP patients. The current study aims to examine race and sex differences in pain sensitization among CLBP patients and the role of catastrophizing as a potential mediator of those differences. Participants were 324 Black and non-Hispanic White adults (27% Black, 47% female) with idiopathic CLBP. Participants completed a series of questionnaires followed by a battery of quantitative sensory testing (QST) using weighted pinprick stimulators and a rapid cuff inflator to induce mechanical punctate pain and deep muscle pressure pain, respectively. Results of 2 (race) X 2 (sex) analyses of covariance indicated a significant effect of race for all QST variables such that, compared to White participants, Black participants reported greater mechanical punctate pain intensity ratings ($p<.01$) and aftersensations ($p<.01$) as well as deep muscle pressure pain ratings ($p<.01$) and aftersensations ($p<.01$). Further, Black participants required less cuff inflation to produce moderate pain ($p<.01$) and demonstrated greater temporal summation for both mechanical punctate pain ($p<.01$) and deep muscle pressure pain ($p<.01$). There were also main effects of sex for mechanical punctate aftersensations and inflation pressure needed to produce moderate pain. Compared to males, female participants rated mechanical punctate aftersensations as more painful ($p<.01$) and required less cuff inflation to produce moderate pain ($p<.01$). Results of mediation analyses indicated that catastrophizing mediated the race differences in temporal summation of deep muscle pain, cuff inflation pressure needed to produce moderate pain, and mean cuff pain intensity ratings. That is, Black participants endorsed greater catastrophizing which was associated with greater temporal summation of deep muscle pain, less pressure required to produce deep muscle pain, and greater cuff pain intensity ratings. These findings are consistent with the literature indicating that Blacks and females experience heightened pain sensitization compared to Whites and males, respectively. While catastrophizing may play a role in pain sensitization among CLBP, a more nuanced understanding of this relationship is warranted.

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THE SOCIAL CONSTRUCTION AND LANGUAGE OF PAIN AMONG WOMEN MANAGING KNEE OSTEOARTHRITIS PAIN

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Introduction: The experience of knee OA pain is a shared and socially constructed phenomenon. For individuals living with and managing symptomatic knee OA, expressions of pain reflect biopsychosocial dimensions affecting health-related quality of life. The aim of this study was to explore the socially-constructed experiences of knee OA and pain among women managing the disease.

Methods: Four focus groups were conducted to examine the narrative experience of living with and managing doctor-diagnosed knee OA pain among middle and older-aged women; ages 51- 72. Diagnosis of knee OA ranged from six months to 20 years. Sixteen women participated in the focus groups; nine African American and seven non-Hispanic Whites. Sessions were held for approximately one hour each, audio-taped, text transcribed verbatim, and coded for content analysis with NVivo software. Cross-verification was conducted to examine and confirm textual data for emergent themes (pain avoidance, pain sensitivity, coping mechanisms, etc.) and conceptual constructs.

Results: Ratings of pain ranged from 10 at its mildest, and 100 at its worst. The time of day, weather and physical activity affected the quality of the pain. Pain descriptors included: “throbbing,” “can’t take it anymore”, “frustrating,” as “something you don’t want to think about, but makes you think about it all the time”, “emotional”, and “to be without pain is a blessing”; makes one “happy”. When in pain, “pain makes you cry, you get pissed, sad, and tired”. Pain “is always there”. Treatments for pain included both biomedicine and alternative remedies. African American women reported using more complementary and alternative treatment methods (tea-tree oil, blue emu, heat/ice packs, etc.) compared to non-Hispanic White women who reported more biomedicine use (hyaluronic acid, meloxicam, tramadol, etc.). Women from both ethnic groups were supportive of knee joint replacement, but AA women were less likely to undergo the invasive procedure.

Conclusion: Women managing knee OA pain have commonalities in the experience of living with the degenerative disease. Understanding the qualitative dimensions of knee OA pain holds promise for individualized precision medicine for improved pain treatment; thus, reducing pain health disparities and increasing health-related quality of life.

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TREATMENT OF CHRONIC PAIN AND COMORBID PTSD WITHIN A PAIN REHABILITATION PROGRAM: EXAMINING FUNCTIONAL OUTCOMES & PTSD SYMPTOMS

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Introduction: Patients who experience both chronic pain and post-traumatic stress disorder (PTSD) report greater pain, affective distress and disability when compared to those with either chronic pain or PTSD alone. As many as three quarters of patients who initiate care for PTSD have significant chronic pain issues. Conversely, 20 to 37% of persons presenting for chronic pain care have PTSD. These reports suggest that rather than being distinct disorders, chronic pain and PTSD may be intricately connected and mutually maintaining each other. While there is empirical evidence that individuals with comorbid chronic pain and PTSD can benefit from interdisciplinary pain rehabilitation programs (IPRP) in terms of pain outcomes, there is a dearth of evidence demonstrating PTSD symptomology is responsive to such a treatment approach. This study sought to examine treatment outcomes among patients enrolled in a three-week IPRP with chronic pain and a provisional PTSD diagnosis.

Methods: Outcome data for 62 patients completing treatment at the Mayo Clinic 3-week IPRP between January 2016 and December 2017 with a provisional diagnosis of PTSD were examined. A provisional PTSD diagnosis was established based on the National Center for PTSD scoring recommendations for the PTSD Checklist for DSM-5 (PCL-5). Within-subjects ANOVAs were used to examine pre- to post-treatment changes on pain specific self-report outcomes (e.g., pain severity, interference, catastrophizing, depressive symptoms) and performance-based outcomes (e.g., aerobic capacity, trunk strength), as well as self-report PTSD symptomatology.

Results: For pain outcomes, significant improvements were detected for all self-report (F 's > 55.18 , p 's η^2 's $> .48$) and performance-based measures (F 's > 27.72 , p 's $< .001$, η^2 's $> .32$). Participants also endorsed significantly lower total PCL-5 scores from pre- to post-treatment, $F = 26.55$, $p < .001$, $\eta^2 = .36$. In addition, only 29 patients continued to meet provisional PTSD diagnosis at post-treatment (i.e., 47.3% reduction in diagnosis across treatment).

Conclusions: This study suggests that IPRPs can facilitate functional and psychological improvement for patients with chronic pain and likely comorbid PTSD. Additional research is needed to understand the mechanisms of change for these patients as a means to identify evidence-based approaches to facilitate functioning.

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DISTRESS TOLERANCE AND PAIN EXPERIENCE IN YOUNG ADULTS WITH CURRENT PAIN

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Pain, and pain-related problems affect a significant portion of the United States population (Nahin, 2015) and cause significant disability. Importantly, emotional distress has been associated with more severe and disabling pain experience (Craig, 1994). One transdiagnostic factor that may be particularly important in this context is distress tolerance, reflecting the perceived capacity to withstand distress related to affective, cognitive, and/or physical states (Simons & Gaher, 2005). Previous research has examined pain tolerance as a predictor of pain experience. However, although pain tolerance and distress tolerance are similar, they are distinct constructs (Asmundson, Peluso, Carleton, Collimore, & Welch, 2011). Therefore the current study sought to explore distress tolerance in relation to pain intensity, pain disability, and past-3 month frequency of pain disability in a sample of young adults.

Participants ($N = 1,577$, 79.9% female, $M_{age} = 22.17$, $SD = 5.24$) reporting bodily pain were recruited for a survey based study at a large southwestern university. Participants completed the Distress Tolerance Scale (Simons & Gaher, 2005), the Graded Chronic Pain Scale (Von Korff et al., 1992), the Short Form General Health Survey (Stewart, Hays, & Ware, 1988), and reported on their drug and alcohol use. Two-step stepwise multiple linear regressions were conducted using SPSS Version 24 for pain intensity and pain disability, and a negative binomial regression was conducted for the past-3 month frequency of pain disability variable.

In predicting pain intensity, distress tolerance was a significant predictor ($B = -0.05$, $SE = 0.01$, $p < 0.001$, $\Delta R^2 = 0.012$). Additionally, distress tolerance significantly predicted pain disability ($B = -0.083$, $SE = 0.01$, $p < 0.001$, $\Delta R^2 = 0.03$). Finally, distress tolerance was a significant predictor of days with pain disability ($B = -0.007$, $SE = 0.002$, $p = 0.005$).

Results from the study indicated that distress tolerance was significantly associated with pain outcomes. Specifically, lower tolerance for distress was associated with greater pain complaints and disability. Clinically, it may be important to assess and target distress tolerance in the context of pain treatment to lessen the negative impact of pain experiences. Overall, the current study provides initial empirical evidence that distress tolerance may be important to understanding more severe and disabling pain experiences among young adults experiencing current pain.

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MERITORIOUS AWARD WINNER

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GREATER PAIN DISCLOSURE AT PREOPERATIVE VISITS PREDICT LOWER SELF-REPORTED PAIN AT POSTOPERATIVE VISITS

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Preoperative visits provide a time for the patient to discuss diagnoses and concerns with a surgeon. This visit is meant to inform the patient about what will happen surrounding the surgery and assuage any fears that may arise. A common fear about surgical procedures is pain, yet little is known about the role of disclosing pain in preoperative visits. To explore how discussing pain at the preoperative visit was related to postoperative self-reported pain, 147 general surgery, preoperative clinic visits were audio recorded and transcribed. Forty-eight patients returned for their postoperative visit, which was recorded. Self-reported pain was assessed just prior to both visits with the surgeon. The preoperative and postoperative visit transcripts were analyzed using a software program with a validated pain-specific dictionary, which provides a proportion of pain related words to total words spoken. Patients' pain word use at the preoperative visit predicted lower self-reported pain at the postoperative visit, controlling for preoperative self-reported pain and self-reported worst pain since the operation ($\beta = -.32$, $p = .04$). Further, pain word use at the preoperative visit was not related to preoperative self-reported pain ($r = .04$, $p = .67$) and postoperative pain word use was not related to postoperative self-reported pain ($r = -.12$, $p = .55$). This finding adds to the importance of the patient/surgeon interaction. Further, this study highlights the growing importance to focus on preoperative techniques in preventing postoperative pain. These findings underscore the importance of providing the patient with the opportunity to discuss their pain, and concerns surrounding it, at preoperative visits, as they were associated with less pain after the surgery.

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HISPANIC ETHNICITY, ETHNIC ATTITUDES, AND CHRONIC PAIN CARE: A VIRTUAL PATIENT INVESTIGATION

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Previous research has found Hispanic American (HA) patients are less likely than Non-Hispanic White (NHW) patients to receive opioid medications, but little is known about the potential influence of patient ethnicity on clinicians' use of integrated treatments for chronic pain. This is striking, given that HAs represent the fastest growing demographic group in the U.S., HAs are at high risk for chronic pain, and clinical guidelines recommend an integrated approach to chronic pain care. To address this gap, we recruited medical students (N=97) to make decisions regarding pain assessment and treatment (referral to pain specialist, mental health counseling, and physical therapy [PT]) for 8 computer-simulated patients. Patient vignettes included a video and text description of a HA or NHW patient reporting chronic low back pain. Patient ethnicity was manipulated in the video; clinical information and pain expression was similar across vignettes. Participants also completed measures assessing their attitudes towards out-group members and rated their emotional reactions (e.g., hostility, disdain, warmth) when providing care to HA and NHW patients. Paired samples t-tests indicated that, on average, participants made statistically equivalent assessment and treatment decisions for HA and NHW patients ($ps > 0.10$). Surprisingly, participants reported more negative attitudes when providing care to NHW patients than HA patients ($t(96) = 2.92, p = 0.004, d = 0.33$). Pearson correlations indicated that more negative attitudes towards HAs was associated with lower pain assessment ratings ($r = -0.25, p = 0.008$) and lower likelihood of referring HA patients to a pain specialist ($r = -0.21, p = 0.03$); participants' attitudes towards NHW patients were not significantly associated with their assessment or treatment decisions for these patients ($ps > 0.10$). These data suggest that, in the aggregate, medical students make similar pain assessment and integrated care decisions for HA and NHW patients with chronic low back pain. Nevertheless, the results suggest that providers' negative attitudes about HA patients may contribute to disparate care delivered to these already vulnerable patients. This is one of the first experimental investigations of ethnic differences in integrated chronic pain care, the results of which raise the possibility that interventions targeting provider attitudes may reduce disparities and improve care for HA patients.

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HOW DO ADOLESCENT BOYS AND GIRLS PERCEIVE SYMPTOMS OF ENDOMETRIOSIS AMONG PEERS?

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Background: Symptoms of endometriosis, including debilitating pelvic pain, back and nerve pain, irregular menstruation, and painful sex, often begin in adolescence. Yet, research on the experience of these debilitating pain symptoms among young people is scarce. Of particular concern is the influence of adolescent girls' social context. Research with adult women that their social environment (e.g. intimate partners, friends, family members, healthcare providers) plays a critical role in shaping their experiences of endometriosis. Understanding contextual factors among adolescents is important given their developmental stage and sensitivity to the beliefs and behaviors of others.

Objectives: To qualitatively examine how, among adolescents, endometriosis and painful symptoms suggestive of endometriosis, is perceived at the family, peer/school, and community/society levels.

Methods: Eight focus groups were conducted with an ethnically diverse sample of boys and girls (N=54) residing in New York City. Vignettes were utilized to elicit participants' perceptions of factors that may shape girls' experiences of seeking help for endometriosis pain.

Results: Five major factors, which operated at multiple levels of the social environment, were identified: distrust of healthcare providers, stigma, lack of endometriosis knowledge, inequitable gender norms, and invisibility of pain and menstrual symptoms. These factors were perceived to impact girls' social, educational, and emotional well-being.

Conclusions: Findings underscore the importance of understanding the social environment of girls with symptoms of endometriosis and educating and engaging their peers, family, and school personnel to create a supportive, informed social climate. Efforts should include stigma reduction campaigns targeted towards female and male adolescents.

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INJUSTICE PERCEPTIONS PREDICT FUTURE FUNCTIONING IN CHILDREN WITH CHRONIC PAIN: A 12-MONTH FOLLOW-UP

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Pain-related injustice, or the perception of one's pain as unjust, has been identified as an important cognitive-emotional factor in the pain experience of children. Recent studies have found pain-related injustice predicted unique variability in physical disability and in emotional, social, and school functioning – over and above that of pain catastrophizing – in a pediatric chronic pain sample. Additionally, pain-related injustice, but not catastrophizing, partially mediated the relationships between pain intensity and stress, disability, and quality of life. Because the literature has been largely cross-sectional in nature, little is known about the temporal relationship between injustice perceptions and pain-related functioning in children and adolescents. The purpose of the current study was to examine the extent to which baseline levels of perceived injustice predicted pain-related functioning 12 months later among children and adolescents with chronic pain. The sample consisted of 81 pediatric chronic pain patients (mean age = 14.2 years, 74% female) presenting to an outpatient university-based pain clinic. Patients completed measures at their initial clinic visit and at a 12-month follow-up appointment. The measures assessed current pain intensity (NRS), perceptions of injustice (IEQ, completed at baseline only), functional disability (FDI), pain catastrophizing (PCS-C), and quality of life (PedsQL). Baseline perceived injustice was significantly associated with follow-up scores on measures of functional disability ($r = .35, p < .05$), and quality of life ($r = -.37, p < .05$). In hierarchical regression analyses, after controlling for baseline pain intensity and catastrophizing, baseline perceived injustice accounted for an additional 5% of the variance in 12-month quality of life ($p < .05$) but did not account for significant additional variance in 12-month functional disability ($p > .05$). These findings suggest that injustice perceptions have prognostic value in predicting future pain-related functioning, which may indicate a need for new interventions that specifically target injustice perceptions early in the pain experience of children and adolescents.

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PAIN RELIEF INTERVENTION USING MBCT IN END STAGE RENAL DISEASE (PRIMER): A FEASIBILITY PILOT STUDY

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Background: Pain is a relevant yet underestimated problem in end stage renal disease. Although helpful, pain medications have been shown to cause several side effects. Psychological distress is also extremely common in patients with end stage renal disease and may worsen the perception of pain. Mindfulness Based Cognitive Therapy has been proved effective in reducing both distress and pain in individuals with different medical conditions. The overarching goal of PRIMER is to explore the feasibility of a Mindfulness Based Cognitive Therapy intervention to reduce pain in dialysis patients. Main aim of the study is to determine: a) Feasibility of recruitment; b) Feasibility of delivering the intervention chair-side at the dialysis facility while the participant is ongoing treatment; c) Acceptability of the intervention.

Methods: PRIMER is a cluster controlled feasibility trial comparing usual care and 8 weeks of individual 1-hour session of MBCT, with nested qualitative research to evaluate patients' satisfaction and suggestions to improve the intervention. Participants were 20 patients with ESRD who were receiving hemodialysis, recruited from two different locations of the Rogosin Institute (New York, NY, USA) to avoid contamination between intervention and usual care. Main outcomes of the study to establish feasibility and acceptability were: a) eligibility rates; b) acceptance rates; c) dropout rates; d) number of sessions attended; e) number of weeks needed to complete 8 sessions.

Results: In the controlled site, 17 patients were approached. Of these, 13 were eligible to participate in the study (eligibility rate 76.5%) and a total of 8 (acceptance rate 61.5%) enrolled in our study. In the intervention site, 75 patients were approached. Of these, 54 were eligible to participate (eligibility rate 72%, 95%CI:5.41–9.32) and a total of 12 (acceptance rate 22%, 95%CI:1.12–3.78) patients enrolled in the intervention. In regard of feasibility and acceptability of the intervention, 2 of the 12 patients enrolled dropped out after the second session (dropout rate 16%, 95%CI:0.2–6.02). The 10 patients who remained in the study completed all the sessions. Specifically, 1 patients completed the 8 sessions in 12 weeks, 1 in 11 weeks, 2 in 9 and 6 in 8 weeks (89 total weeks required instead of 80).

Conclusion: Overall, we obtained mixed results. On one hand, our pilot showed the feasibility of delivering the intervention at chair side and its acceptability with only two patients dropping out and the other patients completing all the sessions. On the other hand, we failed to enroll eligible patients. Difficulties in enrolling medical patients are not new, however this population proved to be particularly challenging to engage. Future studies should investigate barriers to participations and include components of motivational/engagement interviewing during recruitment.

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PERSONALITY ATTRIBUTES AND MIGRAINE IMPACT ASSOCIATED WITH MIGRAINEURS' EMERGENCY CARE

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Introduction: Migraines are a common presentation in emergency care center (ECC) (i.e., emergency room or urgent care) settings. Previous studies have found that migraineurs visit ECCs for severe headache episodes or lack of treatment options. However, little research has examined ECC visit frequencies in relation to migraineur personality attributes and perceived migraine impact (PMI). It was hypothesized that migraineurs who have more negative personality attributes and greater PMI, visit ECCs more frequently.

Methods: ECC visits, personality attributes, PMI (e.g. 'I feel embarrassed about having migraines': 5 point Likert Scale), and demographics were collected on 4,502 US adult migraine participants in the 2015 Migraine.com survey. Composite ECC visit groups included: no visits (58.1%), 1–3 visits (26.7%), 4–6 visits (8.8%), and >7 visits (6.4%).

Results: Participants were primarily middle age (M=47.5 years; SD=10.2), women (95.5%), between 3–4 migraines per months (M=3.7; SD=1.2). Linear regression showed that participants with more ECC visits describe themselves as: lonely ($\beta=.047$, $p<.00$), unreliable ($\beta=.054$, $p<.00$), depressed ($\beta=.097$, $p<.00$), angry ($\beta=.081$, $p<.00$), and helpless ($\beta=.081$, $p<.00$). Using ANOVA, PMI significantly differed among the groups ($F(3,4498)=158.8$, $p<.00$), with greater PMI equating to more frequent ECC visits.

Discussion: Our study found a positive relationship between ECC visits and negative personality attributes. Indicating that a population of frequently visiting ECC migraineurs, who also have a strong likelihood of having negative personality attributes, are improperly using ECCs. Conventional emergency treatments are intended to treat isolated headache emergencies (i.e., with medications like opioids and NSAIDs) and emergent mental health issues. Yet, the target population is using ECCs to treat ongoing migraine disorders and mental health issues. Thus, we suggest ECCs screen migraineurs for mental issues (e.g., screening for words like 'lonely', 'unreliable', 'depressed', 'angry', or 'helpless') to identify migraineurs who frequently seek emergency migraine treatments. Once identified, ECCs can refer patients to more appropriate treatment including pain management psychologists. Advantages of this empirically-supported approach include: (1) implementing long-term migraine treatment strategies (2) reducing the chances of ECC facilitated drug dependencies, and (3) reducing unnecessary migraineur ECC visits.

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SELF-PERCEPTIONS AND GENDER-ROLE STEREOTYPES OF PAIN IN PHYSICIANS AND DENTISTS

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Introduction: Research suggests that women are seen to be more sensitive and willing to report pain, and less able to endure pain compared to men. Such stereotypical views among healthcare providers may influence clinical decision making, with some studies suggesting providers of both genders see women as more likely to exaggerate their pain. A provider's perception of their own pain experience may affect their assessment of a patient's pain. Further, providers may act more empathic towards members of their own in-group (e.g., same gender); for example, both male and female providers are more likely to prescribe analgesics to patients of their same gender. Thus, the goal of this study was to determine how healthcare providers perceive their own gender-related pain attributions.

Methods: 169 practicing physicians and dentists (80 physicians, 40% women) were recruited to participate in an online study on assessment and clinical decision making in pain management. Participants completed a demographic questionnaire and the Gender Role Expectations of Pain (GREP) Questionnaire, which asks participants to rate their own willingness to report pain, sensitivity to pain, ability to endure pain compared to the typical man and the typical woman.

Results: A MANOVA was run for each pair of GREP questions related to willingness, sensitivity, and endurance of pain. Compared to their same sex, both men and women rated themselves as more willing to report pain ($F_{(1,165)}=5.692$, $pd=.182$), and female providers rated themselves as more willing to report pain compared to other women, but not men ($F_{(1,165)}=12.323$, $pd=.546$). For pain sensitivity, female providers rated themselves as less sensitive to pain than other women, and male providers rated themselves as more sensitive to pain than other men ($F_{(1,165)}=4.347$, $pd=.327$). No effects of provider sex on endurance were found.

Discussion: These findings suggest healthcare providers have differential stereotypical views of gender-related differences in pain in relation to themselves and when compared to members of the same sex. Female providers viewed other women as less willing to report and more sensitive to pain than themselves, and male providers viewed other men as less willing to report and less sensitive to pain than themselves. Perception of pain in patients can be influenced by a provider's own experience of pain, and differential views of the pain experience in patients based on the patient's sex may influence clinical decision making. Future work can refine the effects of social learning history and other psychosocial factors that contribute to gender and provider differences in pain management decisions.

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THE CHRONIC PAIN MANAGEMENT SHARED MEDICAL APPOINTMENT: INTEGRATION OF OPIATE OVERDOSE EDUCATION

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BACKGROUND: In May 2014, in an effort to prevent opioid-related mortality, the Veterans Health Administration (VHA) launched a national Opioid Overdose Education and Naloxone Distribution (OEND) program that targeted two patient populations: (1) patients prescribed opioids and (2) patients with opioid use disorders (Oliva et al., 2017). OEND includes education on opioid overdose prevention, recognition, and response, including provision of naloxone. Naloxone is a lifesaving medication that has an excellent safety profile (e.g., is inert unless opioids are in the system) and if administered in a timely manner and in sufficient amount, it can reverse an opioid overdose and prevent death. These aspects have led to naloxone distribution to laypersons that includes FDA-approved layperson naloxone formulations (e.g., auto-injector and nasal spray). Notably, there is a tremendous amount of support for OEND within VHA with the recent Comprehensive Addiction and Recovery Act of 2016 (Public Law 114-198) eliminating copay requirements for Veterans receiving OEND (eliminates copays for both education as well as the medication) as well as a "Free-to-Facilities" naloxone initiative that provides naloxone—paid for by VHA Pharmacy Benefits Management Services—to be dispensed to VHA patients without the medical center incurring the cost of naloxone. With regards to patients prescribed opioids, as many patients receive opioids in primary care settings, there is increasing interest in understanding how to feasibly implement OEND in primary care. One promising approach is integration into Shared Medical Appointments (SMAs). SMAs are an effective way to educate patients within Primary Care settings. SMAs are group visits that typically are focused on chronic condition management (e.g. diabetes, insomnia). SMAs are unique to the primary care setting and are differentiated from mental health or psychoeducational classes as they include the following components: prescriber intervention, education and individualized treatment planning. For the purposes of this program evaluation, our primary care clinic sought to integrate OEND into a chronic pain SMA. The SMA is offered weekly however it is utilized as a one time or PRN visit that is facilitated by a health psychologist, MD or PharmD, and a registered nurse. The goals of this program evaluation are to examine the feasibility and acceptance of naloxone education and distribution within a chronic pain SMA.

METHOD: To examine feasibility, this program evaluation will describe the process by which OEND was integrated into a chronic pain SMA. This information can help inform future efforts to integrate OEND into primary care settings. To examine acceptability, we will examine how many patients accept an offer of a naloxone prescription after being trained in OEND during the SMA. To examine differences in pain and depression self-report between patients prescribed opiates and those who are not, we provide descriptive data for 283 patients who attended the SMA between July 2014 and July 2017. This chronic SMA did provide psychoeducation on risks of opiates use and reviewed universal precautions but did not provide OEND training and naloxone prescription. This data was not complete as only a portion of data were not entered into the data base thus the total number of patients who attended the SMAs during this time frame is greater than sample presented in this program evaluation.

RESULTS: Feasibility—While the chronic pain SMA was initiated in 2009, in 2016 the clinic began discussion of how to integrate OEND into their primary care setting. The health psychologist who chairs the primary care pain program reached out to the VHA National OEND Coordinator and facilitated discussion with the primary care clinic pain committee. The committee decided that integration into the chronic pain SMA was a promising approach and that a clinical pharmacist and clinical psychologist trained in OEND would be best suited to lead the SMA. In the summer of 2017 the process was operationalized and OEND was integrated into an existing chronic pain SMA. Notably, this chronic pain SMA is a mixed group of some of which do and do not receive opioids from VHA. In September 2017, 9 of 15 patients accepted naloxone kits at the chronic pain SMA which integrated the OEND training (See table 1). Acceptability—Among the 15 patients that attended the SMA with integrated OEND training (3 were prescribed opioids by VHA; and 5 others had risk factors for accidental overdose for themselves or someone else), 9 accepted naloxone prescription. With regard to differences in self-report measures among patients prescribed opiates and those who are not between 2014–2017—When patients who attended were divided into those who had active prescriptions for opiates and those who did not, the two groups were similar in their PEG and PHQ-9 scores (See tables 2 and 3). **DISCUSSION:** These results suggest that an SMA approach to OEND in primary care is feasible and acceptable to patients. Notably, even patients who were not receiving opioids from VHA were interested in a naloxone prescription

(at least one of these patients was considering seeking opioids outside of VHA). These findings build upon previous work in this area that found that the majority of patients receiving opioids for ≥ 3 months (including patients receiving opioid substitution treatment as well as prescription opioids for pain) were interested in obtaining naloxone (Tiffany et al. 2015). Our preliminary findings suggest that OEND may be an intervention to offer broadly to patients with pain conditions. Given that patients with pain conditions—including those who do as well as those who do not receive opioids from their primary care provider—may seek opioids from other places and/or have conditions that may increase risk for overdose (e.g., sedative prescriptions, sleep apnea, etc.), universal OEND training may be warranted to increase awareness about risk for overdose and ways to mitigate risk. With regard to PHQ-9 and PEG scores, both patients who do and do not receive opioids appear to have similar scores across these measures. Thus SMAs for patients, regardless of opiate use status, may be helpful as these appointments may also assist in identifying and addressing other risk factors and assist in comprehensive treatment planning. For example, a patient in pain who is not using opiates may be experiencing depression which can be addressed as part of his/her pain management plan that is developed in the SMA. This program evaluation demonstrates the following: 1) patients may accept naloxone kits regardless if they are actively using opiates and 2) patients appear to have similar self-perceptions of pain and depression regardless of use of opiates and 3) it is feasible to integrate OEND training into an existing primary care SMA.

Table 1. Case Descriptors and acceptance of naloxone Case # Opiate use status Acceptance of naloxone kit High risk info 1 Active Rx Accepted Hx of high dose opiate 2 No Rx/use Accepted Wife is rx opiates 3 No rx/use Accepted 4 No rx/use Accepted Hx of high dose opiate 5 No rx/use Accepted 6 Active Rx Accepted Hx of opiate dependence 7 No rx/use Accepted considering seeking opioids outside of VHA 8 No rx/use Declined 9 No rx/use Declined 10 No rx/use Declined 11 Active Rx Accepted 12 No rx/use Declined 13 No rx/use Accepted Has used wife's rx 14 No rx/use Declined 15 No rx/use Declined Table 2. Opiate prescription and self-reported depression and pain scores No VHA Opioid Prescription (n=173) VHA Opioid Prescription (n=109) PHQ9a M=16.6, SD=8.3 M=17.3, SD=6.8 PEGb M=6.3 SD=2.5 M=6.8 SD=2.4 PEG2c M=5.5, SD=2.6 M=5.8, SD=2.5 PEG3d M=5.7, SD=2.8 M=6.3, SD=2.6 a = PHQ9 depression questionnaire: 0–4 minimal symptoms of depression; 5–9 mild; 10–14 moderate; 15–19 moderate severe; 20–27 severe b = Please rate your average pain over the past week. c = Please rate your worst pain over the past week. d = Please rate your least pain over the past week. Table 3. Descriptive Statistics for Opiate prescription and self-reported depression and pain scores Opioid Prescription N Minimum Maximum Mean Std. Deviation .00 PHQ9 173 0 35 16.60 8.355 PEG 173 0 24.0 6.347 2.4932 PEG2 172 0 10.0 5.517 2.6005 PEG3 173 0 10.0 5.728 2.7595 Valid N (listwise) 172 1.00 PHQ9 109 0 34 17.33 6.819 PEG 109 1.0 15.0 6.844 2.4197 PEG2 109 0 10.0 5.821 2.5180 PEG3 109 0 10.0 6.335 2.5910 Valid N (listwise) 109 REFERENCES: Oliva, E.M., Christopher, M.L.D., Wells, D., Bounthavong, M., Harvey, M., Himstreet, J., Emmendorfer, T., Valentino, M., Franchi, M., Goodman, F., Trafton, J., & VHA OEND National Support & Development Workgroup. (2017). Opioid overdose education and naloxone distribution: Development of the Veterans Health Administration's National Program. *Journal of the American Pharmacists Association*, 57, S168-179. Tiffany, Elizabeth, Wilder, Christine, C. Miller, Shannon, Winhusen, Theresa (2015). Knowledge of and interest in opioid overdose education and naloxone distribution among US veterans on chronic opioids for addiction or pain. *Drugs: Education, Prevention and Policy*.

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THE IMPACT OF AGE OF MIGRAINE ONSET ON SYMPTOMOLOGY AND DIAGNOSIS DELAY

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Introduction: Migraines are a common disorder and considered one of the most disabling diseases. Even with a high prevalence rate, migraines are still misdiagnosed especially in the pediatric population who often present with atypical symptoms. This study aimed to examine symptomology variances among age of migraine onset groups as well as the time from migraine onset until a formal diagnosis was made; hypothesizing that childhood onset have a longer time until diagnosis and a wider spectrum of symptoms compared to adulthood onset.

Method: 4,502 adult participants were recruited from an online migraine specific website. An adaptive retrospective self-report survey included questions on demographic characteristics, migraine incidence, symptomology, diagnosis and treatments. Composite variables were generated that examined the age of migraine onset and time until diagnosis. Cohorts were formed based on migraine symptom onset age: childhood (0–12 years), adolescent (13–18 years), and adulthood (19+ years). Data were analyzed using one-way ANOVA and regression analysis based on age of onset cohort.

Results: Symptoms were significantly different among onset age groups with childhood onset experiencing higher rates and variety of symptoms such as Alice in Wonderland Syndrome ($p < .00$, $\eta^2 = 0.123$), Moderate/Severe Nausea ($p < .00$, $\eta^2 = 0.108$), Vomiting ($p < .00$, $\eta^2 = 0.122$) and Sensitivity to Smell ($p < .00$, $\eta^2 = 0.156$). Atypical symptoms were more often experienced in childhood onset while “typical” symptoms (e.g. photophobia, phonophobia) were more often found in adult onset. Diagnostic timelines showed that 27.8% of childhood onset reported 15+ years between symptom onset and diagnosis compared to 5.7% in the adult onset group. 23.9% of the adult onset reported less than six months between symptom onset and diagnosis compared to 7% in the childhood onset.

Discussion: This study uniquely allowed us to capture a population of migraineurs who experienced migraine symptoms in childhood but may not have been diagnosed immediately. These findings show a negative correlation between age of migraine onset and length of time until a diagnosis is received. The variance in experienced symptoms among age cohorts could explain the negative correlation. Common diagnostic tools and symptom markers used for adults may be insufficient or inaccurate for pediatric diagnostics. Further understanding of these symptom differences may decrease diagnostic delays in the pediatric population.

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THE LONGITUDINAL EFFECTS OF SYMPTOM DURATION AND SELF-EFFICACY ON PAIN AND FUNCTION IN WOMEN WITH FIBROMYALGIA

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THE ROLE OF SELF-COMPASSION IN FUNCTIONING AMONG THOSE WITH CHRONIC PAIN

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Previous research has shown that self-compassion is associated with improved functioning and health outcomes among multiple chronic illnesses, such as inflammatory bowel disease, celiac disease, and cancer. However, the role of self-compassion, and particularly the use of the Self-Compassion Scale, has been understudied in those with chronic pain. The present study seeks to understand the association between self-compassion and important measures of functioning within a chronic pain sample. Treatment-seeking individuals (N= 343) that were mostly White (97.9%) and female (71%) with chronic pain completed a battery of assessments that included the Self-Compassion Scale (SCS), as well as measures of pain-related fear, depression, disability, pain acceptance, success in valued activity, and use of adaptive pain coping strategies. Cross-sectional multiple regression analyses that controlled for age, sex, average pain intensity in the last seven days, and pain duration, revealed that self-compassion did account for a significant and unique amount of variance in all measures of functioning (r^2 range: .060 – .321, all $p < .001$). Inspection of beta weights indicated that higher self-compassion was associated with lower pain-related fear, depression, and disability, as well as greater pain acceptance, success in valued activities, and utilization of adaptive pain coping strategies. These findings suggest that self-compassion may be a relevant adaptive process in those with chronic pain. Further, it is possible that improving self-compassion over the course of treatment may be of benefit to those with chronic pain.

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VARIATIONS IN MIGRAINE TREATMENT METHODS USED BY SOCIOECONOMIC STATUS GROUPS

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ENHANCEMENTS IN CARDIOVASCULAR FITNESS AND COGNITIVE, SOCIAL, AND EMOTIONAL FUNCTION FOLLOWING EXERCISE IN OLDER ADULTS

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Physiological and neurocognitive changes experienced as a result of increasing age may influence socio-emotional functioning and economic behaviors, yet the mechanisms through which these changes occur are not well understood. Studies have also shown that aerobic exercise may protect against age-related cognitive decline in other domains. The FORCE trial is designed to test the hypothesis that aerobic exercise will enhance social, emotional and economic functioning in older adults, including testing the potentially differential effects of exercise intensity on physiological and psychosocial outcomes. Sedentary adults ($n = 84$) aged 60 and over (range 60 – 88, $M = 69.73$) were randomly assigned to one of two 16-week supervised exercise interventions: low intensity continuous training (LICT) or moderate intensity continuous training with interval training (MICT+IT). At baseline and the end of the intervention, participants completed a maximal exercise test (i.e., VO_{2max} testing) and a battery of measures assessing cognitive, social, emotional, and economic function.

Participants increased their maximal exercise capacity from pre- to post-intervention [$F(1,82) = 16.16, p < .001$], and this effect was qualified by a time X condition interaction [$F(1,82) = 12.13, p = .001$], such that those completing MICT+IT had greater gains in cardiorespiratory fitness than those completing LICT. Importantly, aerobic fitness, cognitive function, and well-being were related over time. Performance on a measure of executive function improved from pre- to post-intervention [$F(1,74) = 12.38, p = .001$]. Following the intervention, stronger aerobic fitness was associated with higher performance on a measure of economic function [$r(82) = .285, p = .009$], and there was a trending relationship between executive and economic function [$r(79) = .201, p = .08$]. Enhancements in maximal exercise capacity from pre- to post-test were associated with decreased depressive symptoms at post-test [$r(82) = -.281, p = .01$]. These findings highlight the synergistic relationships between physiological, cognitive, socio-emotional, and economic function in older adults. Importantly, they indicate promise for interventions including moderate intensity exercise with interval training among older adults, and the results suggest that salutary effects of physical exercise can be achieved even if it is started later in life.

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A SYSTEMATIC REVIEW AND META-ANALYSIS OF THE OUTCOME EXPECTANCY CONSTRUCT IN PHYSICAL ACTIVITY RESEARCH

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BACKGROUND: Cognition-based theories dominate health behavior change research, including physical activity research. Beliefs about the consequences of behavior (e.g. outcome expectancies, perceived benefits and barriers) are a common feature of such theories. It is important to examine whether the literature supports the outcome expectancy construct as a predictor of behavior.

AIM: This study reviewed observational (i.e. non-intervention) reports of longitudinal associations between outcome expectancy beliefs and physical activity in adults. Studies were eligible if (a) the target behavior was a form of physical activity, (b) beliefs about the consequences of physical activity behavior were measured, and (c) beliefs were measured at a time point prior to physical activity.

METHODS: Literature searches were conducted in November 2016 in seven relevant databases. This search yielded 3,380 references, 873 of which underwent full-text review by two independent coders. Of these, 23 observational studies met the inclusion criteria. Random effects meta-analysis produced an overall effect of outcome expectancy on physical activity across all studies.

RESULTS: The 23 studies were published between 1989 and 2016, with sample sizes ranging from 19 to 1,193. Studies assessed different types of positive and negative outcome expectancy beliefs including those related to weight, health, time commitment, affect, enjoyment, social, physical and self-evaluative beliefs. Looking across all types of beliefs, a positive association was identified ($r = 0.13$; 95% CI [0.037, 0.221]). Examining only those studies which assessed positive beliefs about physical activity, a positive association was identified ($r=0.18$; 95% CI [0.118, 0.237]), and within studies which assessed negative beliefs, a negative association was identified ($r= -0.11$; 95% CI [-0.204, -0.010]).

CONCLUSIONS: The results indicate a small effect size for the association between outcome expectancy beliefs and physical activity in the context of observational studies. Many studies were not included in the meta-analysis due to an explicit lack of reporting of non-significant effects. Given the number of studies failing to report non-significant associations, and the potential number of studies never published due to non-significant results, this small effect size may be an overestimation of the effect. Findings raise questions about the extent to which outcome expectancies influence physical activity behavior.

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CORRELATES OF MUSCLE-STRENGTHENING ACTIVITIES AMONG LATINAS ENROLLED IN A FAITH-BASED PHYSICAL ACTIVITY INTERVENTION

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Introduction: Despite the health benefits of regular physical activity (PA), only 12.2% of Latinas meet the national guidelines for both aerobic and muscle-strengthening PA. Increasing evidence indicates that engaging in muscle-strengthening PA can produce greater health improvements than aerobic alone, including improvements in insulin sensitivity, HbA1c, blood pressure, and reducing mortality risk. While most PA interventions in Latinas have focused primarily on increasing aerobic PA, there is a need to help Latinas achieve the full PA guidelines. The purpose of this analysis was to examine correlates of muscle-strengthening PA among participants enrolled in *Fe en Acción*, a randomized controlled trial of a faith-based intervention promoting aerobic and muscle-strengthening PA in Latina adults.

Methods: Using baseline data from *Fe en Acción*, we examined the association between behavioral/psychosocial factors and participants' level of muscle-strengthening PA (i.e., engaging in strength PA one day/week or none at all vs meeting the national guidelines of ³2 days/week). Independent samples T-tests were used to examine associations between continuous variables (demographics, social support, behavioral strategies, self-efficacy, diet) and muscle-strengthening activities. Differences in categorical variables (marital status, employment, acculturation, health status) and levels of muscle-strengthening PA were assessed using Chi-Square tests.

Results: Participants (N = 436) were Latina women (77% married) ages 18–65 (44.4 ± 9.6 years) who were recruited from Catholic churches in San Diego, California. At baseline, 3.2% (n = 14) reported performing muscle-strengthening PA on one day/week and 19% (n = 83) met the national guidelines for muscle-strengthening PA. Participants who performed muscle-strengthening PA on ³2 days/week reported significantly higher social support for PA (M = 1.65 vs 1.23, t(429) = -3.14, p = .002), use of behavioral strategies for PA (M = 4.80 vs 2.86, t(404) = -6.44, p < .001), consumption of fruits (M = 3.77 vs 3.33, t(427) = -2.37, p = .018), and lower barriers to PA (M = 21.51 vs 25.35, t(238) = 2.21, p = .028) compared to those who did not meet the national guidelines for muscle-strengthening activities.

Conclusion: The same psychosocial variables commonly associated with aerobic PA were also significantly related to muscle-strengthening PA among Latinas. One implication is that similar strategies can be used to promote both types of PA.

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PSYCHOSOCIAL OUTCOMES FOLLOWING A RANDOMIZED PILOT TRIAL TO REDUCE SITTING TIME IN OLDER ADULTS WITH OBESITY

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Introduction: Sedentary behavior is characterized by prolonged periods of sitting and is associated with poor health and higher risk of mortality, independent of physical activity. Older adults with obesity spend more time sitting than any other demographic, making them particularly vulnerable to health consequences. Behavioral theories suggest that psychosocial factors are important for promoting changes in physical activity, and these constructs are often the target of interventions. However, little is known about the relationship between psychosocial factors and sitting time. Therefore, we assessed whether psychosocial factors were impacted after participation in a 12-week sedentary behavior reduction intervention (I-STAND) for older adults.

Methods: Adults (n = 60) age 60–89 with a BMI ≥ 30 kg/m² were randomized to I-STAND or a healthy living control group. I-STAND participants received 6 health coaching sessions, a study workbook, a Jawbone UP band to prompt breaks from sitting, and activPAL feedback on sitting time. At baseline and 12-week follow up, participants completed a survey with scales measuring psychosocial factors: perceived benefits (6 items) and barriers (4 items), self-efficacy (9 items), and habit strength (10 items) regarding sitting time. Validated measures do not currently exist for older adult sitting time, so psychosocial scales were modified from other health behaviors (e.g., physical activity). Responses were scored on a 5-point Likert scale and averaged for analyses. Linear regression assessed associations between group assignment and average score for each psychosocial scale at 12-week follow up, adjusting for baseline scores.

Results: At 12-week follow up, I-STAND participants had higher self-efficacy (β=0.35, 95% CI: 0.09–0.61, p<0.01) and reduced habit strength (β=0.23, 95% CI: 0.03–0.43, p=0.02) compared to control participants. There were no differences in perceived benefits or perceived barriers to reducing sitting time.

Conclusions: A sedentary behavior reduction intervention for older adults improved confidence to reduce sitting time and reduced the strength and automaticity of sedentary habits in this pilot study, however the effects were small. More research is needed to understand whether these psychosocial constructs translate to changes in sitting time.

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THE RELATIONSHIP BETWEEN MODERATE-TO-VIGOROUS PHYSICAL ACTIVITY AND TIME-ON-TASK ON ACADEMIC ACHIEVEMENT

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Objective: To determine the impact of classroom-based physical activity and time on task (TOT) following activity on academic achievement.

Methods: Seventeen elementary schools were cluster randomized to a 3-yr. classroom based physical activity intervention ($n=9$) or non-active control ($n=8$). Classroom teachers were trained to deliver academic instruction using moderate-to-vigorous physical activity (MVPA) with a target of 100+ min./wk.⁻¹. Duration and intensity of active lessons and time spent on task pre and post lesson were assessed by direct observation across 3 yrs. Academic achievement in math, spelling, and reading (Wechsler Individual Achievement Test-III) was assessed at baseline and repeatedly each spring for 3 yrs. Multilevel modeling was utilized to estimate (linear) change in academic achievement over the study period, the effect of time spent in MVPA (percent), or TOT post-lesson (percent), and their interaction on academic achievement, controlling for dependency among observations and covariates including age, gender, race, free or reduced lunch, BMI (percentile), and aerobic fitness (PACER).

Results: Children ($n=319$ intervention and $n=314$ control) were 7.57 ± 0.58 years old, 50.6% girls, 81.4% White, and 28.4% receiving free/reduced meals at baseline. Multilevel modeling revealed that spending more time in MVPA (percent) was associated with higher math ($p<.05$) and spelling scores ($p<.001$), but not reading scores when controlling for age, gender, race, free/reduced meals, BMI and aerobic fitness. With regards to covariates, math scores were significantly higher in boys when compared to girls ($p=.036$). Students receiving free/reduced meals had significantly lower scores in reading, spelling, and math when compared to students who did not (all $p<.01$). Greater aerobic fitness was significantly associated with higher scores in math and spelling (all $p<.05$). Age, gender, race, and BMI on were not significantly associated with academic achievement. TOT was not associated with academic achievement scores.

Conclusion: These findings suggest that participating in MVPA delivered in the form of physically active classroom lessons were associated with better achievement in math and spelling in elementary school children. Future studies should continue to evaluate the influence of physical activity in the classroom and TOT behaviors and its impact on academic achievement to determine the sustainability of physical activity's effect on classroom behavior.

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ACCELEROMETER MEASURED SEDENTARY TIME, SELF-REPORTED PHYSICAL FUNCTION AND QUALITY OF LIFE IN AFRICAN AMERICAN OLDER ADULTS

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Purpose: Sedentary time has been increasingly recognized as a distinct health risk behavior. The purpose of this study was to determine the associations between accelerometer measured sedentary, light and moderate-vigorous physical activity (PA) and self-reported physical function and quality of life among older adult cohorts.

Methods: African American older adults ($N=110$, Mage: 64.7 ± 5.7 ; males =14) completed the Late-life Function and Disability Instrument (LLFDI) and the SF-36 health related quality of life. Sedentary time and PA were assessed objectively using a 7-day accelerometer wear period and scored using the NHANES cut-offs for sedentary (<100), light (101–2019) and moderate-vigorous PA (>2020 activity counts/minute).

Results: Within the younger cohort ($N=55$, Mean age=60.07), sedentary time significantly correlated with the LL-FDI, total disability frequency ($r=-.49$, $p<.001$) and limitation ($r=-.28$, $p=.04$). MVPA was associated with the LL-FDI subscales within the older cohort ($N=55$, Mean age=69.47) but not in the younger cohort. Both light PA and MVPA were associated with total function score on the LLFDI for the younger cohort. On the SF-36, sedentary time ($r=-.32$, $p=.02$) and MVPA ($r=.32$, $p=.01$) were associated with general health for the younger cohort, whereas light PA was associated with physical functioning ($r=.28$, $p=.04$) and general health ($r=.36$, $p=.01$) within the older cohort.

Conclusion: Although sedentary time and light PA were not significantly different between the two cohorts of older adults, it showed unique associations with self-reported physical function and quality of life within the younger (< 64.5 yrs) and older (> 64.5 yrs) participants. Examining sedentary time and light PA along with MVPA can provide significant information for designing future health and PA interventions within different cohorts of older adult populations.

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ASSOCIATIONS BETWEEN SLEEP AND ACTIVITY: EVALUATING BETWEEN- AND WITHIN-PERSONS RELATIONSHIPS

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Physical activity (PA) and sleep are important predictors of overall health. Prior research suggests a bidirectional relationship between sleep and activity, with most research focused on the sleep-related benefits of increased PA. The potential influence of sleep on PA has received less attention. Using data from an observational study of community adults, the present analysis: (1) tested the between-person associations between sleep parameters and activity (average counts per minute, and counts per minute during morning [7am-12pm], afternoon [12pm-5pm], and evening [5pm-10pm] windows), (2) examined the within-person relationship between activity and sleep on the preceding night, and (3) examined the within-person relationship between sleep and activity the preceding day. Daily sleep actigraphy and accelerometer data were available on 729 participant-days across 169 participants (age: $M=44 \pm 13$; 82.0% female; 65.4% ethnic minority). Controlling for age, sex, and weekday/weekend, higher average PA was associated with increased average sleep latency ($p = .02$) and decreased average sleep efficiency ($p = .04$), but not average total sleep time. Increased sleep latency was associated with greater evening activity ($p = .01$) and decreased sleep efficiency was associated with increased afternoon ($p = .03$) activity. Within-persons, increased total activity was predicted by increased sleep latency ($p = .05$) and decreased efficiency ($p < .01$) and total sleep time ($p = .03$) during the night prior. Within-persons, sleep latency, efficiency, and total sleep time were not predicted by total activity. Collectively, poorer sleep predicted increased activity on the following day, whereas sleep was not predicted by PA within-persons. It may be that other measures of activity, e.g., bouts of cardiovascular activity, predict sleep while total activity does not. Future research should explore whether other activity behaviors help to explain sleep-activity relationships, whether prescribed changes in PA behaviors alter sleep outcomes, and what explains the negative relationship between sleep and activity.

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CITATION AND MERITORIOUS AWARD WINNER

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EFFECTS OF GENETIC RISK AND SOCIAL ENVIRONMENTAL FACTORS ON PHYSICAL ACTIVITY IN AFRICAN-AMERICANS ADULTS

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Given current national trends in health disparities, it is important to examine factors that may promote physical activity (PA) in underserved (low-income, minority) populations. Genetic and environmental neighborhood risk likely interact to influence PA, though these effects have not been studied as a function of the neighborhood context in underserved African-American communities. This study specifically expands on prior research by using an established measure of genetic risk shown to be dependent on environmental conditions in healthy adults (Li et al., 2010), in order to understand potential gene-by-environment effects in African-American populations. The purpose of the present study was to examine the effects of genetic risk for obesity (using the Li Index) and social environmental factors (walkability, neighbor social support for walking) on moderate-to-vigorous (MV) PA in African-American adults who took part in the Positive Action for Today's Health (PATH) trial, an environmental intervention to increase walking. Buccal swabs were used to collect genetic data and twelve single nucleotide polymorphisms (SNPs) were genotyped using an established obesity-risk Li index. MVPA was assessed using 7-day accelerometry estimates. Regression analyses were conducted to examine the relationship between genetic risk and environment factors on MVPA after controlling for intervention and community. The sample included 223 participants (59% female; BMI $M=31.0$, $SD=7.4$; age $M=51.7$, $SD=15.6$). On average participants completed less than one year of college (68%) and had less than \$25,000 annual family income per year (65%). The overall regression model for PA was significant ($F [11, 211] = 10.44$, $p < 0.05$), and accounted for approximately 32% of variance. The genetic Li Index was a significant predictor of MVPA ($B = -26.90$, $SE = 13.15$, $p < 0.05$), and lower genetic risk was associated with greater MVPA overall. Additionally, neighborhood social support ($B = 4.26$, $SE = 2.37$, $p=0.07$) and places for walking and cycling ($B=5.25$, $SE = 2.80$, $p=0.06$) were marginally significant for predicting MVPA, and may also be important factors to consider in future investigations. Continued research is needed to better understand the potential mechanisms underlying these genetic and social environmental environmental effects which may inform community-based interventions and policy efforts for promoting PA in underserved African-American communities.

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EXERCISE PRESCRIPTION FOR BREAST CANCER SURVIVORS TAR- GETING CARDIOVASCULAR HEALTH INDICATORS: A SYSTEMATIC REVIEW

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Breast cancer is the most common cancer among women affecting 1 in 8 women, with an estimated 252,710 new cases in 2017. Advances in early detection and treatment have resulted in a 10-year survival rate of 80%. Yet, survivors remain at increased risk for long-term cardiovascular disease (CVD) complications due to these treatments. Physical activity is an important treatment component for certain types of cancer including breast cancer and CVD. The purpose of this study was to conduct a systematic review of the cardiovascular health benefits of exercise among breast cancer survivors who had undergone treatment. A literature search was conducted to locate 367 articles relevant to breast cancer survivorship, physical activity, and indicators of cardiovascular health. Inclusion criteria were studies examining breast cancer survivors that completed treatment within 10 years; including an aerobic, resistance, or concurrent exercise intervention; and investigating cardiovascular health indicators. A total of 23 randomized controlled trials qualified, all following the American College of Sports Medicine (ACSM) recommendations of at least 30–60 minutes/day of moderate-to-vigorous intensity exercise for at least 5 days/week. No intervention included solely resistance regimens. Eleven interventions involved aerobic exercise only (47.8%), 12 combined aerobic and resistance (52.1%), and one combined aerobic and flexibility (4.3%) training. All samples consisted of breast cancer survivors aged 18+ yr from a variety of ethnic/racial groups [Caucasian ($n=15$, 65.2%), African American ($n=2$, 8.6%), Asian ($n=1$, 4.3%); Latina ($n=3$, 13%); Not reported ($n=2$, 8.6%)]. Length of the exercise interventions varied widely from 8 weeks to 3 years and measured cardiorespiratory function baseline, post-intervention, and at intervals (dependent on the length of intervention). Aerobic-only ($n=11$) and aerobic-combination intervention reported significant improvements in peak oxygen consumption, blood pressure, resting HR, forced vital capacity, and expiratory volume. Out of the 12 concurrent interventions, 7 (58.3%) reported improvement in cardiovascular health (VO_2 max, cholesterol, BMI, etc.), 3 (25%) noted enhanced muscle strength and endurance, and 2 (16.7%) improvements in fasting glucose. Data are currently being extracted and analyzed regarding the influence of different types of physical activity on treatment-related CVD indicators. Adherence to the ACSM exercise recommendations for breast cancer survivors resulted in improved cardiovascular health benefits that may have a favorable impact on survivorship.

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MERITORIOUS AWARD WINNER

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EXERCISE SELF-EFFICACY GROWTH TRAJECTORIES AFTER 20 HOURS OF COGNITIVE TRAINING

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Exercise self-efficacy (SE) is one's perception of his or her own ability to regularly exercise. It has been well-established that exercise SE has a tendency to be inflated at the start of an exercise program, and drop at the end. To date, no randomized controlled trials have been designed to change SE through multimodal cognitive training (CT). The aim of the CORTEX trial was to increase exercise adherence for middle-aged adults through enhancing SE and self-regulation via a 20-hour CT program, relative to an attention control (health-related videos) group. All participants were then provided a 4-mo membership to a local fitness facility. A latent growth curve model (LGCM) was used to examine how exercise SE changed at crucial points of the program, assessed via the composite score of the *Exercise Self-Efficacy Scale* at the start of CT (m0), the start of the exercise program, after a month of exercise, and at program end (m5). When collapsed across all participants, irrespective of group, the slope was not significant, although SE decreased from program start ($M_0 = 82.96$) to end ($M_5 = 67.19$). However, group did have a significant impact on slope ($\beta = -3.32, p = .04$). To further explore this, we tested a second LGCM allowing for group differences and found the model fit the data ($\chi^2(13) = 17.12, p = .19, CFI = 0.972, SRMR = 0.068$). The CT and video group showed mean differences from baseline ($M_0 = 82.35$ vs. 83.59 , respectively) to program end ($M_5 = 68.86$ vs. $M_5 = 54.38$), with the CT group having a significant but less severe decline (slopes = -3.20 vs. $-6.37, p < .01$). Unlike the video group, the CT group showed an increase in exercise SE after CT, followed by less decline after the first month of exercise. A positive relationship was found between class attendance and SE change, indicating that smaller declines in SE were associated with higher class attendance in both groups; however, the CT group effect on this relationship was nearly twice the video group effect ($\beta = 4.27$ vs. $2.18, p < .01$). Consistent with prior research, exercise SE appears to decline at the start of an exercise program in the absence of intervention. Further declines are expected at program end in anticipation of non-supervised, fully self-regulated exercise. Future mind-body interventions should be designed to optimize the recalibration of SE levels and reserves, to prevent or attenuate these expected decreases in SE, at critical periods before, during and after an exercise program.

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GOALS MATTER: EXERCISING FOR REVITALIZATION INCREASES AUTONOMY AND FUTURE EXERCISE BEHAVIOR AMONG PARENTS

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Objective: Many parents exhibit high levels of inactivity. Further research is needed to understand the goals that drive sustained exercise participation in this population. The purpose of this study was to examine the relationship between changes in parents' exercise goals, autonomous and controlled motivation, and exercise behavior across one year.

Methods: Mothers ($n=150$) and fathers ($n=46$) of children under age 16 completed the Exercise Motivations Inventory-2, the Behavioral Regulation in Exercise Questionnaire-2 and the Godin Leisure Time Exercise Questionnaire at baseline and one year later. A path analysis tested a model whereby changes in exercise goals (stress management, revitalization, positive health, ill-health avoidance, weight management, and appearance) were associated with changes in leisure-time exercise via changes in autonomous and controlled motivation.

Results: Increases in revitalization goals were associated with increases in autonomous motivation ($\beta=0.33, p<.05$), whereas increases in appearance goals were associated with decreases in autonomous motivation ($\beta=-0.18, p<.05$). Changes in weight-related goals were positively associated with changes in both autonomous ($\beta=0.29, p<.05$) and controlled motivation ($\beta=0.18, p<.05$). Changes in health-related goals were not associated with changes in either autonomous or controlled motivation. Changes in autonomous but not controlled motivation were positively associated with changes in exercise behavior ($\beta=0.26, p<.05$). Tests of indirect effects of goals on exercise behavior (via autonomous motivation) were significant only for revitalization goals (positive effect= $0.08, p=0.02$) and appearance goals (negative effect= $-0.05, p=0.03$).

Conclusions: Only revitalization goals were positively associated with both autonomous motivation and exercise behavior over time. These findings support recent calls to "rebrand exercise" as a means to improve daily well-being. By adopting exercise goals related to revitalization, as opposed to appearance, weight, or health, parents appear to be more likely to prioritize exercise because they value the immediate positive experiences it provides for themselves and their families. Thus, exercise promotion messages targeting parents should highlight the "feel-good" effects of exercise that are immediately noticeable and facilitate autonomous motivation, as opposed to appearance goals that may ultimately undermine autonomous motivation and behavior.

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GROUP VIDEO CONFERENCING FOR EXERCISE DELIVERY IN YOUNG ADULTS WITH DOWN SYNDROME

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Between 250,000 and 400,000 individuals in the United States are diagnosed with Down syndrome (DS). Nearly all adults with DS will develop Alzheimer's disease (AD) pathology starting in their thirties. Recent studies suggest that increased physical activity (PA) may be important for maintaining components of cognition, including memory. However, PA rates of adults with (DS) are low, and effective strategies for increasing PA are limited. The purposes of this study were to assess the feasibility of group-based exercise sessions delivered remotely to young adults with DS and to evaluate changes in cognitive function after completion of a PA intervention. Participants were randomized to attend 30-minute group exercise sessions 1 or 2 times a week for 12 weeks. The exercise sessions were delivered via video conferencing on a tablet computer to groups of 5–8 participants. Groups were formed based on mutual time availability. The sessions were led by a health educator who was a specialist in adapted physical education and experienced in working with adults with DS. The 1 session/week and 2 sessions/week groups were conducted separately but led by the same health educator. Sessions consisted of a 5-minute warm-up, 20 minutes of MVPA (i.e., 3–6 METs), and a 5-minute cool-down period. The MVPA was comprised of aerobic based exercises such as walking and jogging to music, dancing, as well as strength based exercises such as vertical jumps, bicep curls, and squats. Exercise intensity increased progressively across the first 6 weeks of the intervention, then remained steady weeks 7–12. Cognitive function, was measured at baseline and end of study using the Cantab Dementia Battery for iPads, the specific variables measures were two paired associates learning variables, which assess the cognitive domain of memory, PALTEA and PALFAMS. Twenty-seven participants (27.9 ± 7.1 years of age, 40.7% female) enrolled and completed the 12-week intervention. On average participants attended 89.5% of the group exercise and 83.5% of the individual support sessions. there were no significant differences in exercise session attendance between those randomized to 1 ($89.9 \pm 8.8\%$) or 2 sessions/week ($88.8 \pm 7.7\%$; $p=0.790$). Participants randomized to 1 session/week averaged 26.6 ± 3.0 mins/week of MVPA from the group exercise session. Participants randomized to 2 sessions/week averaged 57.7 ± 15.3 mins/week of MVPA from the group exercise sessions. Participants in the 2 sessions/week group significantly improved their performance on the two paired associate learning variables ($p=0.046$ and 0.011). Group-based exercise sessions delivered remotely may be a feasible approach for delivering exercise to adults with DS, and increased exercise may have positive changes on memory.

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INFLUENCE OF SCHOOL INTERVENTION ON PARENT'S PHYSICAL ACTIVITY PERCEPTIONS, SUPPORT AND BEHAVIOR

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Regular physical activity (PA) is important for health, yet most children do not meet the recommended guidelines of 60 minutes per day. School-based interventions have been deemed the most universally applicable and effective way to counteract low PA. Parental support and role modeling of PA is consistently associated with children's participation in PA. Using Social Cognitive Theory as a guide, the purpose of this study is to determine the effects of a school PA intervention on parents' support for PA (SS_{tot}), perception of school PA (PA_{per}), and self-report PA behavior (PA_{beh}). Data was collected via surveys prior to the intervention in September (T1) and in May (T2). Parents who have children in 4th grade in six urban elementary schools participated in the survey ($N=217$; mothers =80%, African American=52%, $M_{age}=36$). SS_{tot} consisted of 4 sub-categories (Logistic (LS), Modeling (MS), Community Resource (CRS), and Restricting Sedentary Behavior (RSB)). As a measurement of program engagement, the survey contained 4 questions on a scale from 1-none to 5 -a lot: "How much do you know about the program" ($M=3.3+/-1.22$), "How much have you engaged in the program" ($M=2.5+/-1.38$), "How important is promoting health at school" ($M=4.75+/-0.56$), and "To what degree has the program affected your family's lifestyle" ($M=3.5+/-1.19$). Paired-samples t-tests with a Bonferroni correction were conducted to compare all variables at T1 and T2. There was a significant difference in the scores for T1 and T2 for: SS_{tot} ($M_D=2.13$; $t(216)=3.38$ $pD=.52$); $t(215)=2.94$ $pD=.64$); $t(216)=2.82$ $pD=.76$); $t(215)=4.18$ $pbeh$ ($M_D=7779$); $t(115)=3.66$ $pper$ ($M_D=.40$); $t(186)=1.32$, $p=.19$, or RSB ($M_D=.35$ $t(216)=1.1$, $p=.27$). Results from this study show: 1) Parent's total, logistic, modeling and community support improved over time, 2) Parents did not improve their support of restricting access to sedentary behaviors, and 3) Parents viewed PA as an important part of the school day before the intervention. This study is significant because it shows school-wide interventions have the potential to increase parental support and PA behaviors, which in turn could impact children's PA levels. Furthermore, it highlights that parents may not realize the detrimental effects of sedentary behavior at home, despite knowing the importance of PA.

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LOWER SELF-COMPASSION PREDICTS INCREASED FREE-LIVING PHYSICAL ACTIVITY IN COLLEGE-AGED UNIVERSITY STUDENTS

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Introduction: Self-compassion, an attitude of self-kindness, mindfulness, and a sense of common humanity, has been related to numerous health behaviors¹ and appears to be an important factor in health across multiple domains.^{2,3,4} However, little research has examined the association of self-compassion with objective health measures. High levels of free-living physical activity are an important health behavior, as more sedentary behavior has been related to an increased risk of both fatal and non-fatal cardiovascular disease.⁵ This study examined the relationship between self-compassion and free-living physical activity (step count) in college-aged students.

Methods: The sample (N = 94) was aged 19.51 ± 1.75 , 79.8% female, and 77.7% Caucasian. Participants completed the Self-Compassion Scale (SCS), which measures three facets on continuums, including self-kindness, common humanity, and mindfulness. Participants wore an accelerometer for a 10-hour period during a standard weekday and step counts were obtained. Hierarchical linear regressions were performed to determine whether self-compassion explained variability in free-living physical activity (step count) after controlling for age and sex.

Results: The mean SCS score was 3.11 ($SD = .69$), and mean step count was 8385.9 ($SD = 3250.78$). After controlling for demographic variables, the SCS composite was negatively associated with step count (see Table 1).

Discussion: Contrary to the hypothesis, in this sample of college-aged students, poor self-compassion predicted increased step count. In other words, increased free-living physical activity was predicted by higher levels of self-judgment, isolation, and over-identification. The results from this study, which included an objective measure of physical activity, contradict previous research supporting the association between self-compassion and increased self-reported physical activity.¹ These findings challenge previous research using self-report methodology. It is possible that those lower in self-compassion engage in more free-living physical activity, but still exercise less. However, future research should verify this finding and seek potential mechanisms.

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METHODS FOR AN MHEALTH APPROACH TO PREVENT WEIGHT REGAIN BY REDUCING SEDENTARY BEHAVIOR IN OLDER ADULTS: THE EMPOWER TRIAL

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Background: The promotion of “spontaneous physical activity” (SPA) across the intensity spectrum and throughout the day may be useful for promoting lasting weight loss. SPA interventions build activities into daily life while minimizing time sitting. Because SPA interventions are less aversive to older adults relative to structured exercise, early evidence suggests they may be more sustainable. There is a need to understand the impact of SPA interventions on long-term maintenance of weight loss, and to identify methods for intervening on movement patterns among older adults across the day.

Purpose: The “Empowered with Movement to Prevent Obesity and Weight Regain” (EMPOWER) study aims to compare the effects of 3 interventions on weight loss over 6 months, and on the prevention of weight regain during a 12-month follow-up period. Interventions include (1) A treadmill-based walking intervention (EX); (2) A SPA intervention; and (3) a combined EX+SPA condition.

Methods: During the first 6 months, participants attend weekly group weight loss sessions, and those in the EX conditions engage in a combination of supervised and home-based walking 4 times weekly, progressing to 40–50 minutes at 65–70% heart rate reserve. Those in the SPA intervention receive self-regulation skill training and an individualized daily step goal that is monitored using a study app that places emphasis on movement throughout the day. Throughout the intervention, all participants have access to a condition-specific app paired with a Fitbit. Activity data are imported into the app in near real time, and participants access data in both summary form (e.g., transitions, steps) and on a unique “daily timeline”. This graphical feedback bar provides insight into minute-level movement patterns. Sedentary minutes are colored blue, and for those in the EX conditions, movement minutes are colored teal, while sustained bouts of at least 10 minutes are colored green. Participants aim to achieve one green bout most days per week, and bout duration is tailored by the exercise leader. Movement is colored green for those in the SPA conditions, who aim to minimize periods of sustained blue (sitting) by frequently standing and moving. Participants gain access to a number of evidence-based app tools meant to improve self-efficacy and social connection. For instance, “mastery badges” highlight mastery experiences, and are released as when in-app goals are met. Participants work toward cooperative goals (e.g., standing out of all of the seats in the local football stadium), and have access to in-app group messaging.

Conclusion: The EMPOWER interventions utilize popular technologies integrated into an evidence- and theory-based package with the goal of evaluating the effect of the promotion of SPA on weight loss and on preventing weight regain following intentional weight loss.

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MHEALTH PHYSICAL ACTIVITY INTERVENTION INCREASED EXERCISE TASK SELF-EFFICACY AMONG SEDENTARY ADULTS

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Purpose: Interventions targeting self-efficacy can increase physical activity, which is in turn associated with positive health outcomes. Though mHealth interventions using mobile apps and telephone counseling have shown promise for increasing activity, little is known about their possible mediating constructs such as self-efficacy. In particular, self-efficacy to perform active behaviors (task self-efficacy) may be affected differently than self-efficacy to overcome barriers to being active (barrier self-efficacy). Therefore, this study aimed to examine the effects of a mHealth intervention on task and barrier self-efficacy for physical activity.

Methods: Sedentary, overweight adults (N = 40) were randomized to a 12-week intervention or wait list control. Participants (87.5% female, with mean age 47.80 years (SD = 12.55) and mean BMI 33.22 kg/m² (SD = 12.40)). Participants in the intervention condition were given a mobile device loaded with a physical activity app (Zombies, Run!) and weekly brief phone counseling sessions. The app promoted self-monitoring and virtual rewards, while the phone counseling emphasized problem solving and action planning. Assessments occurred at baseline and 12 weeks, using validated measures (responses between 0 – 100). Data were analyzed using analyses of covariance controlling for baseline values and using the intent to treat principle.

Results: At the 12-week assessment, participants in the intervention group reported significantly higher levels of task self-efficacy as compared to the wait list controls (81.39 ± 15.51 vs. 69.26 ± 20.34, p = .02). However, no significant group differences were observed in barrier self-efficacy (56.56 ± 24.96 vs. 47.78 ± 18.52, p = .34).

Conclusions: Our results suggested that mHealth interventions may differentially impact task and barrier self-efficacy for exercise. The increased task self-efficacy in the intervention group may be related to virtual rewards and encouragement in the app building confidence to perform physical activity. It is unclear why the intervention group did not experience significant improvement in barrier self-efficacy despite counseling on problem solving. This finding may suggest measurement insensitivity and/or a gap between brainstorming potential solutions to barriers and building confidence in addressing them. Future studies should explore more sensitive measures of barrier self-efficacy and alternative ways to promote barrier self-efficacy.

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PHYSICAL ACTIVITY AND SEDENTARY OBJECTIVELY MEASURED IN ADULT CANADIANS WITH CHRONIC DISEASE: A CROSS-SECTIONAL STUDY

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Objectives: The aim of this research is to compare objective physical activity and sedentary behaviors between canadian adults with and without chronic disease, and to examine physical activity and sedentary behaviors between adults with multiple chronic diseases.

Methods: Data were obtained from Canadian Health Measure Survey (CHMS) (2007–2013). Physical activity and sedentary were measured using accelerometry in Canadians aged between 18 and 69 years. Data are presented as daily mean time spent in moderate and vigorous intensity physical activity (MVPA), light physical activity (LPA), sedentary, as well as steps accumulated per day. Pregnant women, participants with functional limitation were not included. Four self-reported chronic diseases were available (i.e., fibromyalgia, diabetes, heart diseases, cancer) in CHMS. The chronic obstructive pulmonary disease was determined with spirometry measures. Among 8380 participants, those with 1, 2, 3 or more were compared with participants without chronic disease. A weighted ANCOVA regression model incorporating age, sex, body mass index, accelerometer wearing time, marital status, smoking status, education level and income was carried out.

Results: Distribution across healthy participants, those with one chronic disease, two and three or more were 74.5%, 21%, 4% and 0.5%, respectively. Participants with two or three and more chronic diseases spent significantly less time in MVPA (min/day) (M=11.6, SE=1.6; M=7.4, SE =1.6) and LPA (M=182.7, SE=7.2; M=160.8, SE=14.5) and had lower daily steps count (M=6272, SE=308; M=5339, SE=542) compared with healthy adults (MVPA-M=22.8, SE=0.6; LPA-M=216.1, SE=1.8; Steps-M=7972 SE=82) or with one chronic disease (MVPA-M=17.6, SE=0.8; LPA-M=210.5, SE=3.4; Steps-M=7598, SE=163). However, sedentary time (min/day) did not differ between the groups, ranging from 442 (SE=3.9) to 486 (SE=33.6).

Conclusion: Our findings highlight the importance of targeting interventions promoting physical activity towards adults with multiple chronic diseases. We found no evidence that canadian adults with one chronic disease were less active in comparison to healthy adults.

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PHYSICAL ACTIVITY PROGRAMMING AND COUNSELING PREFERENCES AMONG CANCER SURVIVORS: A SYSTEMATIC REVIEW

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Background: Physical activity (PA) participation and adherence among cancer survivors is low, despite research indicating numerous physical, psychological and emotional health benefits of exercise. Tailoring exercise programs specific to the PA preferences in cancer survivors has merit for increasing PA participation and adherence to accrue these benefits.

Purpose: This systematic review aims to identify and differentiate exercise programming and counseling preferences of adult cancer survivors across various cancer survivor groups.

Methods: PubMed, SPORTDiscus, Scopus, PsycINFO, EMBASE, Web of Science and CINAHL were electronically searched (inception to Sept 2016) and articles were identified using PRISMA guidelines. Two reviewers independently assessed identified articles to determine eligibility and then individually performed a quality assessment on all final studies. Extracted and analyzed data included participant characteristics, interest in exercise counseling and programming, as well as specific exercise and counseling preferences (e.g. location, timing, intensity).

Results: Thirty-two articles were included in this systematic review. Most studies assessed mixed cancer survivor groups; however, breast cancer and lung cancer were the two most studied individual cancer survivor groups. Most cancer survivors felt able and interested in participating in a PA program, though starting a PA program after or before treatment was preferred. Walking was the strongest PA modality preference, and most cancer survivors preferred moderate intensity PA. Cancer survivors also indicated preferences for home-based PA that could take place in the morning. Slight preferences were found towards physical activity counseling delivered by a fitness expert from a cancer center. Studies were found to be of moderate to high quality based on the Appraisal Tool for Cross-Sectional Studies (AXIS).

Conclusion: Cancer survivors have an interest in participating in PA programs with walking as the primary modality. Additionally, morning-based PA programs that can be tapered to home-based programs are desirable. Many cancer survivors felt interested and able to participate in PA, and therefore designing PA programs that are tailored to cancer survivors is integral for optimizing recruitment and adherence, as well as enhancing health outcomes in cancer survivors.

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PILOT STUDY OF A YMCA-BASED EXERCISE PROGRAM TO INCREASE EXERCISE ENJOYMENT AND PARTICIPATION AMONG WOMEN WITH OBESITY

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Background: Women with obesity are less likely to engage in regular exercise than non-obese women. Possible reasons for this disparity may be that they less likely to enjoy exercise and more likely to report that they only exercise when trying to lose weight. While women with obesity report interest in social exercise programs that foster better health, most publically available exercise programs targeted to this population focus on weight-loss. There is a need for behavior-change programs for women with obesity that focus on exercise enjoyment rather than weight-loss, and which include opportunities for exercise in a supportive community setting.

Method: Using Social Cognitive Theory as a guide and working with women from the target population and the YMCA, we developed a novel exercise program designed to increase exercise participation among women with obesity through increased enjoyment. The Fit & Fab program, based at the YMCA, included special exercise classes and weekly behavior-change focused group sessions open only to study participants. We recruited women ages 18–64 with a BMI of 30 or higher (N=49) and randomized them to receive either a 3-month YMCA membership (control group, n=24) or a membership plus access to the 3-month Fit & Fab exercise program (intervention group, n=25). Women wore accelerometers for 7 days and completed a survey at baseline and during the last week of the program.

Results: Participants on average were 49.0 years old (SD=10.9) and had a BMI of 38.7 (SD=3.8). Preliminary accelerometer data indicated a trend that change in vector magnitude (raw activity counts per day) was higher for the intervention group (294,624, SD=327,362) compared to the control (100,039, SD 364,938) ($p = 0.07$). We also found that women in the intervention group visited the YMCA more times ($p < 0.0001$) on average over 12 weeks (23.4 times) than women in the control group (9.7 times). Average Physical Activity Enjoyment Scale (PACES) scores at baseline were 80.3 (out 119); at follow-up the intervention group scored significantly higher ($p = 0.04$) on the PACES exercise enjoyment scale (98.1, SD=17.5) compared to women in the control group (85.5, SD=20.5).

Conclusion: An enjoyment-focused exercise intervention was able to increase exercise participation in a high-need population. If we can demonstrate that the Fit & Fab program has an effect on longer term exercise participation and health outcomes, this intervention has the potential to be scaled up through YMCAs across the country.

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PROMPTS TO INCREASE PHYSICAL ACTIVITY AT POINTS-OF-CHOICE BETWEEN STAIRS AND ESCALATORS: WHAT ABOUT ESCALATOR CLIMBERS?

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Background: Since 1980, many studies have evaluated the efficacy of stair-use prompts to increase physical activity by diverting ascenders from escalator to stair use, but nearly all studies combined escalator standing (a *non-active* ascent method) with escalator climbing (an *active* ascent method).

Purpose: This presentation addresses the often-overlooked assessment of climbing up escalators in stair use studies. Ultimately, we assessed the degree to which stair-use prompts led to increased total physical activity—i.e., stair use + escalator climbing.

Methods: At a stairs/escalator point of choice at the San Diego International Airport, we systematically alternated days with sign prompts and days without sign prompts. We video-recorded passersby who ascended either stairs or escalators. Staff reviewed and coded video-recordings of 13,544 participants taken on 20 days spread over five months, and we compared the odds of using the stairs, standing on the escalator, and climbing the escalator on the 10 days with signs vs. the 10 days without signs. Multivariable models were adjusted for age, sex, ethnicity, body shape, shoe type, luggage, and pedestrian traffic volume.

Results: On days without signs, the proportion of stair use (3.6%) was lower than escalator climbing (20.4%) and escalator standing (76.0%). Sign prompts increased the multivariable odds of stair use by 125% (OR=2.25; $p < .001$) when escalator standing and climbing were combined as a comparison (the analytic approach used by nearly all other point-of-choice prompt stair use studies). Comparing the three modes of ascent on days with signs, the proportion of escalator standing did not change significantly while stair use increased to 6.9% ($p < .001$) and escalator climbing decreased to 18.4% ($p = .003$). As an exploratory analysis to assess changes in total physical activity, we combined stair use and escalator climbing into an “active ascent” mode and found that sign-prompts increased the multivariable odds of *active ascent* versus *passive ascent* (escalator standing) by only 15% (OR=1.15; $p = .002$).

Conclusions: Stair use prompts accomplished their intended effect by increasing stair use roughly 125%, an outcome similar to that of many other stair studies. However, the increase in total physical activity was more modest (15%), partly because escalator climbing, a physical activity not targeted by the intervention, decreased. One possible explanation for these findings is that ascenders already disposed to climbing the escalator shifted to stair use in the presence of signs, leading to increased stair use, but little change in total physical activity. Sign prompts specifically designed to increase escalator climbing, as well as stair use, might have a larger impact on total physical activity.

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SOURCE-ORIENTATION IN INTROJECTED REGULATION FOR LEISURE-TIME EXERCISE

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Self-Determination Theory (SDT) is widely used to predict behavior change. To extend the reach of SDT research into effective interventions for promoting exercise (Chatzisarantis & Hagger, 2009; Silvia et al., 2008), more foundational work is required. Namely, the literature is conflicting regarding the relationship between introjected regulation and exercise (Teixeira et al., 2012). This may be due to introjected regulation being an umbrella construct—the dimensions of which have yet to be defined. In an academic domain (motivation and behavior), research has distinguished between avoidance and approach introjected regulation (Assor et al., 2009). We propose these dimensions may predict engagement in leisure-time exercise and that there may be a further distinction in *source* of feelings of introjection—namely, one’s self versus others. From a SDT perspective, we hypothesized the following to be related to exercise engagement from strongest to weakest: self-approach (exercising to feel pride in oneself), self-avoidant (to avoid self-guilt), other-approach (to gain pride from how others see one), and other-avoidant (to avoid feeling guilty for letting others down). 336 undergraduates reported on regulations at baseline and exercise activity at the two-week follow-up. EFA resulted in a three-factor solution accounting for 73.25% of the variation in introjected regulation scores: self-avoidance, other-avoidance, and a general approach factor. Correlation analysis revealed that self-avoidance ($r(334) = .18$, $p r(334) = .15$, $p r(321) = .13$, $p B = 44.50$, $t(2.40)$, $p = .02$) and none of the predictors were uniquely related to exercise at follow-up. Results suggest that it is theoretically important to distinguish between approach vs avoidance introjected regulation and the source of avoidance introjected regulation. However, these distinctions may not explain conflicting relationships between introjected regulation and exercise in the literature.

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THEORETICAL CONSTRUCTS & PHYSICAL ACTIVITY CHANGE IN BREAST CANCER SURVIVORS IN A TECHNOLOGY-BASED PHYSICAL ACTIVITY PROGRAM

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Introduction: Wearable activity trackers support theory-based techniques proven to enhance the success of physical activity interventions. Few studies in breast cancer survivors have examined the relationship of theoretical constructs to physical activity change in a technology-driven intervention.

Methods: Sedentary breast cancer survivors randomized to the physical activity intervention arm of a 12-week randomized controlled trial received a Fitbit One activity tracker and tailored feedback based on Fitbit data. Participants received additional support via phone and email. An ActiGraph GT3X+ accelerometer was worn for 7 days at baseline and week 12 to measure change in moderate-to-vigorous physical activity (MVPA). Theoretical constructs of self-efficacy as well as cognitive and behavioral processes of change were measured at weeks 2 and 10. Paired t-tests examined change in MVPA from baseline to Week 12 and changes in theoretical constructs from week 2 to 10. Multivariate linear regression models controlled for ActiGraph wear time and examined 1) associations between change in theoretical constructs and change in MVPA, and 2) associations between Week 2 scores on measures of theoretical constructs and change in MVPA.

Results: Participants (n=38) were a mean of 58 years (SD=11.3), BMI of 26.4 kg/m² (SD=5.9), and diagnosed 2.5 years ago (SD=1.4); 63% had Stage I disease and 53% received chemotherapy. Participants increased MVPA a mean of 14.7 min/day (SD=13.7; t=6.59, p<.0001). Self-efficacy significantly improved from week 2 to 10 (t=3.80, p<.001) but there were no significant changes in cognitive (t=-.33, p=.74) or behavioral processes (t=-1.48, p=.15). The association between change in self-efficacy and change in MVPA was not significant (b=-2.79, p=.49). However, higher scores on the theoretical constructs at week 2 were related to greater improvements in MVPA: self-efficacy b=7.35, p=.03; cognitive processes b=8.30, p=.04; behavioral processes b=9.49, p=.01.

Conclusion: While the intervention increased self-efficacy, change in self-efficacy was not related to change in MVPA. Lower scores early on were associated with less success in the intervention. Theoretical variables may help identify subgroups of survivors who need more intervention support. With the growing role of wearable activity trackers, additional studies are needed to better understand how established theories operate in this emerging intervention modality to facilitate behavior change in breast cancer survivors.

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USING FITNESS TECHNOLOGY AND WALKING CAMPAIGNS TO INCREASE PHYSICAL ACTIVITY AMONG OLDER BLACK WOMEN IN GIRLTREK

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GirlTrek is a public health non-profit which currently supports and encourages over 110,000 African-American women across the U.S. to change their lives and their communities through the daily habit of walking. GirlTrek shares free, culturally-relevant, monthly health campaigns and challenges to increase daily walking and healthy eating habits, reduce stress, and encourage social support and cohesion among African-American women located in predominately African-American communities in the U.S. In October 2016, GirlTrek staff conducted a pilot study of 82 African-American women to determine if Fitbit technology and a walking competition campaign would be a feasible method to track and encourage walking behavior among older GirlTrek participants.

Methods: Participants were recruited from highly active GirlTrek walking teams in New Orleans, Louisiana, Jackson, Mississippi, and Atlanta, Georgia. During the U.S. Surgeon General's "Step It Up" Campaign, GirlTrek participants were encouraged to increase daily walking habits by any amount for two weeks in October 2016. Participants used their own Fitbit wearable device or downloaded the free Fitbit app to their smartphones to track their daily walking habits. Participants completed a post-campaign survey and shared 4 weeks of Fitbit activity and dietary data via Fitbit's export data option.

Results: Sixty-five percent of participants were age 46 or older, 84% were classified as overweight or obese, 98% owned a smartphone, and 68% used a Fitbit or other wearable activity tracking device to track their activity prior to the walking campaign. During the two-week campaign when participants were encouraged to increase their daily walking habits, 82% of participants walked at least 150 minutes per week compared to 61% one week prior to the campaign. In addition, 78% of the participants reported being encouraged by their walking team members to eat well and drink water. Finally, 77% of the participants reported they planned to continue using the Fitbit technology to monitor activity after the campaign.

Conclusion: Fitness technology coupled with GirlTrek's monthly health-promoting campaigns and walking challenges could play a critical role in assessing and increasing physical activity as well as encourage healthy eating habits among older African-American women.

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WHAT ARE THE BIDIRECTIONAL ASSOCIATIONS BETWEEN SYMPTOMS AND PHYSICAL ACTIVITY IN DAILY LIFE FOR THOSE WITH MULTIPLE SCLEROSIS?

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Individuals with multiple sclerosis (MS) typically experience a complex symptom burden and are less physically active compared with other clinical populations. Because increased physical activity offers many potential benefits in terms of decreased symptom burden and improvement and maintenance of physical functioning, there is a need to identify factors that are related to physical activity in MS. Severity of symptoms, such as fatigue and pain, is negatively associated with physical activity in MS in cross-sectional research. However, it is unclear how physical activity and symptoms correlate bi-directionally on a day-to-day basis in persons with MS. The objective of this study was to determine the temporal within-person associations of pain, fatigue, depressed mood, and cognitive dysfunction with physical activity in MS. Community dwelling ambulatory adults with MS (N=107) were recruited and completed 7 days of home monitoring. Continuous physical activity data (assessed via wrist-worn accelerometer) and concurrent ecological momentary assessment (5X/day) of pain, fatigue, depressed mood, and cognitive dysfunction were collected as participants went about daily life. Correlational analyses of cross-sectional (aggregated) values indicated that symptoms were not significantly related to physical activity over the duration of the home monitoring period (all $r < 0.16$). In contrast, results of multilevel models indicated that fatigue and depressive symptoms demonstrated bi-directional temporal associations with physical activity, whereas pain and cognitive dysfunction did not. Moments of higher than usual fatigue ($B = -5.83$, $p = 0.001$) and depressed mood ($B = -4.12$, $p = 0.03$) were followed by decreased physical activity. In contrast, periods of higher than usual physical activity were associated with subsequent declines in fatigue ($B = -0.001$, $p = 0.02$) and depressed mood ($B = -0.0007$, $p = 0.02$). Interestingly, this negative association between preceding physical activity and subsequent fatigue was only observed in the morning and evening, but not midday. Physical activity is dynamically related to fatigue and depressed mood on a moment-to-moment basis in MS; interestingly, physical activity did not demonstrate similar temporal associations with either pain or cognitive function. Efforts to increase physical activity in MS must incorporate a focus on how symptoms affect and are affected by activity, with particular attention to fatigue and depressive symptoms.

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WORKING OUT WITH F.I.D.O. (FREQUENCY, INTENSITY, DURATION, & OUTCOMES) - A FEASIBILITY RANDOMIZED CONTROLLED TRIAL

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Objective: Dog owners have been shown to walk more per week compared to non-dog owners; however, 60% of dog owners are still not walking their dogs at intensities sufficient to reap health benefits. The aim of this study was to evaluate the feasibility, acceptability, and efficacy of a 9-week feasibility randomized controlled trial involving a program of six weekly scheduled instructor-led group dog walks supplemented with theory-based strategies to encourage increased dog walking among dog owners in Greater Victoria, BC.

Methods: This study was based on the multi-process action control (M-PAC) framework and utilized an open parallel randomized controlled trial design involving experimental and waitlist-control group participants. Quantitative data was collected using pedometers and self-report measures. A program evaluation survey was administered upon the completion of the study. Primary outcomes examined the feasibility and acceptability of the program; secondary outcomes analyzed pedometry and self-report moderate-to-vigorous physical activity (MVPA) data; and tertiary outcomes observed changes in participants' perceptions of M-PAC constructs. Percentage calculations were used to obtain primary outcomes, and analysis of covariance (ANCOVA; controlling for baseline) was performed to examine secondary and tertiary outcomes to explore the direction of effects. Eligibility: Male and female adults aged 18+ living in Greater Victoria, BC, who owned at least one healthy and friendly dog aged six months and above, who were not meeting recommended guidelines of 150 minutes of MVPA per week, and who were medically cleared to participate.

Results: Feasibility outcomes included 74 interested responses, 23% recruitment rate ($n = 17$), 94% retention rate ($n = 16$), and 94% adherence rate ($n = 15$). Program participants were overall (very) satisfied with the program – worksheets (62.5%), instructor (100%), various program logistics (75% to 100%). Total weekly step counts and average daily step counts, MVPA dog walking, and MVPA with dog increased at end-of-program and follow-up, resulting in large effect sizes when compared to the waitlist-control group. MVPA dog walking and total MVPA (with + without dog) exceeded recommended guidelines at follow-up. Positive changes across time were observed for dog responsibility and M-PAC constructs of affective judgments, opportunity, planning, identity, and habit, resulting in medium and large effect sizes when compared to the waitlist-control group.

Conclusions: This six-week group dog walking program is overall feasible, acceptable, and is efficacious in encouraging increased dog walking and MVPA among dog owners. It is recommended for the full trial to refine/modify initial recruitment strategies and eligibility criteria (e.g., reimburse medical/veterinarian clearance costs, offer various options of program delivery).

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COMPARISON OF COLLEGE STUDENTS AND OLDER ADULTS IN HAPPINESS INTERVENTION

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Introduction: College students and older adults are at risk populations for poor mental health issues including depression. Among adults 18 and older, 6.7% have experienced at least one depressive episode per year. Positive psychology interventions can enhance subjective wellbeing and reduce depression. However, a comparison of these programs in older adults and college students has not been widely examined. The present study sought to evaluate and compare an intervention with the goals of enhancing happiness levels and overall mental wellbeing in the older adult and college populations.

Methods: The Art of Happiness classes were conducted in senior centers and at a university as a one credit undergraduate course. Each class examined a different topic including defining happiness, stress management, reflecting on happiness, compassion and human connection, forgiveness, transforming suffering, mindfulness, and humor. Pre and post questionnaires assessed participant subjective happiness, stress, life satisfaction, depression, and general demographic information. Repeated Measures GLM was used to examine group by time effects.

Results: The 32 older adult participants who completed the course were mostly married (43.8%), female (87.5%) and Caucasian (90.6%), with an age range of 53–84 years of age. There were 16 college students between 20–24 years of age mostly female (53.6%), and upperclassmen (87.6%). The results revealed a significant effect of time in both groups for depression (p

Conclusion: Programs like “The Art of Happiness,” which emphasize aspects of wellbeing may have the potential to buffer the older adult population and college students against poor mental health by improving subjective happiness and overall mental wellbeing. This may lead to incorporating these types of programs into both college curriculum and senior centers as part of their healthy lifestyle curriculum in order to improve their overall quality of life as they embark on different stages of their lives.

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RACIAL AND INCOME DISPARITIES IN THE HEALTH-RELATED QUALITY OF LIFE AMONG SMOKERS WHO ATTEMPT TO QUIT

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Background: It has been established that smoking is associated with worse health-related quality of life (HRQoL). However, little is known about the association between HRQoL and race among smokers with quit attempts at different income levels.

Objective: To assess racial and income disparities in HRQoL among smokers who have made a quit attempt.

Methods: This study applied a cross-sectional study design using data from the 2017 LSU Tobacco Control Initiative patient survey conducted at eight Louisiana public hospitals. We extracted 1,108 interviewees responding to HRQoL measures including the EuroQol 5D, which consists of five dimensions and result in an index score adjusted by U.S. population-based preference weights. We classified smoking status into four groups: never smokers, former smokers, current smokers with a quit attempt, and current smoker without a quit attempt. Multivariate linear regressions compared the HRQoL between African Americans and Caucasians.

Results: The sample consisted of predominately African American (59%), female (66%), low income (71%), and never smokers (41%). Bivariate analyses showed significant differences in income and smoking status between African Americans and Caucasians (P=.006 and P<.001). Moreover, African Americans had a significantly higher average HRQoL than Caucasians (P<.001). Controlling for age, sex and education, race, income and smoking status were significantly related to HRQoL in multivariate analyses (all P<.001). Analyses stratified by race and income found that among low-income African Americans, smokers with a quit attempt had a lower average HRQoL than either never smokers (P<.001) or smokers without a quit attempt (P=0.006).

Conclusion: The findings reveal racial disparity in the HRQoL. Moreover, low-income African American smokers who made a quit attempt had a lower HRQoL. Cessation interventions may focus on lower income African American smokers who made a quit attempt to reduce disparities in smoking and HRQoL.

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RESILIENCE AND PSYCHOLOGICAL FLEXIBILITY IN PERSONS WITH SCI: MALLEABLE TRAITS?

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Many persons with spinal cord injury (SCI) thrive despite physical changes, but there is little research examining positive factors that impact rehabilitation success. This study explored contributions to resilience, defined as the ability to adapt and thrive in the face of hardship. Psychological flexibility, the ability to tolerate negative thoughts and feelings in the context of engaging in valued activities, is theoretically related to resilience, but as yet unexplored as a contributory factor. Acceptance and Commitment Therapy, which augments psychological flexibility, has been effective in a number of chronically and/or traumatically affected patient populations. It was adapted to an 8-session, 1–2 hour weekly group format, completed by 12 individuals in two diverse urban locations.

Method: 117 participants (mean age = 46.3, SD=15.3; 65% male; 63% Caucasian) who had sustained a SCI at least one year prior were recruited via medical center registries. A survey design was employed and included the Resilience, Depression and Positive Affect banks of the SCI-QOL measurement system (Tulsky et al., 2015) and the Cognitive Fusion Questionnaire (Gillanders et al., 2014).

Results: Linear regression revealed that the overall model accounted for 71% of the variance in resilience ($F(3, 113) = 93.652, p < .001$). Positive emotion, absence of negative emotion and extent of *cognitive fusion* (i.e., entrenchment in unhelpful thoughts) were each uniquely predictive of resilience ($p < .001$). Whereas absence of negative emotion accounted for less than 2% of unique variance, experience of positive emotion uniquely accounted for 8%, and absence of cognitive fusion uniquely accounted for 4%.

Consistent with expectations, 91% of completers of a pilot ACT intervention with emphasis on reduction of cognitive fusion reported the intervention was “a great deal of help” with regard to “minimizing thoughts/feelings getting in the way” (9% stated “some help”), and 75% reported “a great deal of help” with regard to “getting meaning from my experiences” (25% reported “some help”).

Discussion: Improvement in the quality of life for those with SCI requires better understanding of the principles of positive psychology (i.e., a focus not on symptoms or problems in coping, but positive approaches to coping) within this unique population. By uncovering the mechanisms by which individuals with SCI cope well with their barriers, such as emphasis on the experience of positive emotion and minimal cognitive fusion, we can move towards delivery of innovative rehabilitation programs and standards for delivery of psychological care that are supportive of positive coping. A shift in the thinking in SCI psychological rehabilitation from deficits to attributes and facilitation of underlying positive characteristics in coping with SCI will ultimately improve participation and well-being in the SCI population.

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A QUALITATIVE STUDY OF PREPAREDNESS FOR END-OF-LIFE CARE IN TERMINAL CANCER PATIENTS: THE ROLE OF RELIGIOUSNESS/SPIRITUALITY

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The extent to which patients feel prepared for end-of-life (EOL) care may have significant implications for treatment decisions, healthcare expenditures, and quality-of-life. The concept of “preparedness” has drawn growing interest, but little is known about factors that might influence these perceptions. Religious or spiritual (R/S) involvement often becomes more salient at the end of life, and these commitments might be expected to affect patients’ sense of preparedness. This qualitative study examined associations between religious/spiritual (R/S) factors and preparedness, among cancer patients with terminal illness. We explored whether particular R/S functions might propel or impede perceptions of readiness for managing the myriad challenges of EOL care. Individual interviews were conducted with cancer patients with end-stage disease. Average age was 63.7, most participants were Christian, and the sample included diverse malignancies. Enrollment continued until data saturation. Thematic coding of transcripts was completed by 3 investigators, using NVivo 11 software. Four major themes emerged. Patients perceived that their readiness for EOL care was enhanced by R/S involvement, because it provided them with: (1) spiritual/emotional comfort; (2) a restored sense of control (e.g., part of God’s plan); (3) support from the congregation (e.g., instrumental and emotional assistance); and (4) spiritual guidance (e.g., repentance and redemption). Findings suggest that R/S involvement may assist some cancer patients in feeling more ready to manage the demands of EOL care, by serving several specific functions (i.e., comfort, control, support, and guidance). These results offer a critical foundation for further research in this area. Participants focused on the salutary effects of R/S involvement on emotional and spiritual aspects of preparedness for EOL care. There were few spontaneous narratives concerning religious struggle or alienation, or on the impact of R/S factors on other important domains of EOL preparedness (e.g., managing difficult treatment decisions, financial planning, interactions with the healthcare team). Additional investigations would be helpful to further explore these areas as well.

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COGNITIVE BEHAVIORAL THERAPY FOR MS-RELATED FATIGUE EXPLAINED: A LONGITUDINAL MEDIATION ANALYSIS

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Background Cognitive behavioral therapy (CBT) effectively reduces fatigue in patients with multiple sclerosis (MS). Little is known about the process of change during and after CBT. **Purpose** To investigate which psychological factors mediate change in fatigue during and after CBT in patients with MS. **Methods** Ninety-one patients (44 in CBT, 47 in the control intervention) were included in a trial on the effectiveness of a 16 week CBT treatment for MS-related fatigue. Patients were assessed at baseline, 8, 16 and 52 weeks. Mediation was analyzed in two separate mediation models, one for mediation during treatment and one for mediation post-treatment. Proposed mediators were: change in illness cognitions, general self-efficacy, coping styles, daytime sleepiness, concentration, physical activity, fear of disease progression, fatigue perceptions, depression and physical functioning. Mediators were analyzed separately according to the product-of-coefficients approach. Confidence intervals were calculated with a bootstrap procedure. **Results** During treatment, improvement in fatigue brought on by CBT was mediated by improved fatigue perceptions, increased physical activity, less sleepiness, less helplessness, and improved physical functioning. Post-treatment worsening of fatigue was mediated by reduced physical activity, reduced concentration, and increased sleepiness. **Conclusion** These results suggests that focusing on improving fatigue perceptions, physical activity, sleepiness, helplessness, and physical functioning may further improve the effectiveness of CBT for fatigue in patients with MS. Maintenance of treatment effects may be obtained by focusing on improving physical activity, concentration and sleepiness.

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DO YOU NEED TO KNOW THAT YOUR LIFESTYLE BEHAVIORS ARE “GOOD FOR YOU” IN ORDER FOR THEM TO AFFECT YOUR WELL-BEING?

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Background: This study examined the associations of self-reported diet, physical activity (PA) and sleep with well-being, and the extent to which these associations are mediated by participants' perceptions of these lifestyle behaviors.

Methods: Participants (n=597, mean age=45.1 ± 17.3, women=73%, years of education=16.0 ± 3.9, marital status-married=45%, never married=32%, other=23%) completed the Stanford WELL for Life on-line survey that included questions about 10 domains of wellbeing: social connectedness, lifestyle behaviors (including diet, PA, and sleep), physical and emotional health, stress/resilience, purpose and meaning, sense of self, finances, spirituality/religiosity, and creativity. For each domain, a score from 0–10 was created. Within the lifestyle domain, a sub-domain score from 0–10 was created for each lifestyle behavior. An overall wellbeing score was created by summing the 10 domain scores. Participants were also asked if their current diet, PA and sleep influenced their wellbeing. Linear regression analyses were conducted, controlling for age, gender, education and marital status.

Results: All three lifestyle behaviors were positively and statistically significantly related to well-being. A 10% improvement in the diet domain score was associated with a 2.4 % increase in the overall wellbeing score (95% CI 1.78, 2.97), a 10% improvement in the PA domain score was associated with a 1.3% increase in the overall wellbeing score (95% CI 1.02, 1.66), and a 10% improvement in the sleep score was associated with a 2.18% increase in the overall wellbeing score (95% CI 1.70, 2.66). When the perceived influence variables were added to the models, these associations were attenuated but still statistically significant. For diet, the increase in well-being decreased from 2.4% to 1.8%, with most of the explanation due to people who perceived their diets as harmful to their well-being. For PA, the increase in well-being decreased from 1.34% to .92%, with most of the explanation due to people who perceived their PA as contributing to their well-being. There was no statistically significant association between the perceived influence of sleep and wellbeing.

Conclusion: On average, participants in this study who reported healthier diet, PA and sleep behaviors also reported higher levels of wellbeing. These associations were partially mediated by participants' reports of the influence of these lifestyle behaviors on their well-being. However, a sizable portion of each of the associations was independent of participants' awareness. Implications for intervention and future research will be discussed.

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EFFECTS OF DEPRESSION ON THE QUALITY OF LIFE AMONG FIBROMYALGIA PATIENTS

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Fibromyalgia Syndrome (FMS) is a chronic pain condition characterized by symptoms that include widespread musculoskeletal tenderness, fatigue, cognitive impairment, and altered mood. Those suffering from FMS often report experiencing depression and a lower quality of life. The purpose of the present study was to determine whether depressed and non-depressed FMS patients differed over time in their mood, helplessness, self-efficacy, and health status. Participants were part of an intervention study examining the effects of social support and education, in which no intervention effects were found. Participants were 492 patients with a physician's diagnosis of FMS, which was confirmed by trained research assistants. Participants completed the Center for Epidemiologic Studies Depression Scale (CESD), Profile of Mood States, Arthritis Self-Efficacy Scale, Arthritis Helplessness Index, and the Fibromyalgia Impact Questionnaire at entry into the study and at a 1-year post-assessment. Participants scoring 19 or above on the CESD were categorized as depressed and those who scored below were categorized as non-depressed. A series of 2 (Depression Status: Not Depressed, Depressed) X 2 (Time: Baseline, One-year post-assessment) repeated measures analyses of variance were performed on each of the measures. Significant differences were found for depression status, time, and for the interaction for all analyses. Depressed participants had significantly greater improvements over time in mood, $F(1, 490) = 139.85, p < .001$, helplessness, $F(1, 490) = 11.04, p = .001$, self-efficacy, $F(1, 490) = 23.28, p < .001$, and health status, $F(1, 490) = 30.44, p < .001$ than non-depressed participants. These findings suggest that clinically depressed FMS patients are more likely to have improved changes in their mood, self-efficacy, helplessness levels, and health status than those who are not depressed. One possible explanation for these findings is that depressed people benefit from attention more than non-depressed people. Another possible explanation is that depressed participants' scores regressed toward the mean on the four measures assessed. Future researchers should develop interventions that target depression among FMS.

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EXAMINING THE MOMENTARY EFFECTS OF SOCIAL AND ACTIVE LEISURE ON AFFECTIVE WELL-BEING IN CAREGIVERS

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Leisure engagement is an important component in daily life with beneficial effects on long-term health. Yet the possible mechanisms for how leisure has positive health effects remain to be identified and tested. One possibility is that leisure promotes positive, and reduces negative, affect. Over time, greater affective well-being can predict health given its associations with beneficial self-care and health behaviors. The first aim of this study is to test the in-the-moment associations of leisure with affect. The second aim is to compare social and active dimensions of leisure to test if leisure done in varied ways has different relationships with affect. These aims were tested in a sample of adult caregivers ($n = 25$; age $M=62.71$; 92.0% female; 80.0% white; caregiving hours per week $M=58.61$) who indicated at least three depression symptoms. For leisure, participants were provided with a list of 20 common leisure activities and indicated the frequency of each activity since the last assessment (Pleasant Events Scale-AD). Affect was assessed with 20 mood adjectives that fall into a positive or negative subscale (Positive and Negative Affect Schedule). Leisure and affect were assessed 4 times a day for 14 consecutive days; multi-level models tested the relationships between leisure and positive and negative affect over time. Testing Aim 1, the more frequently a person did leisure in a moment, the more positive ($b = 1.40, SE = .36, p < .001$) and less negative ($b = -.17, SE = .08, p < .05$) that person's affect was compared to moments with less frequent leisure. Testing Aim 2, leisure activities were coded as being social (e.g., having meals with friends or family) or non-social (e.g., watching television), and as being active (e.g., going on outings) or non-active (e.g., reading or listening to stories). Results indicated higher positive affect and lower negative affect in moments when the leisure was either more social or more active. In sum, findings point to a possible mechanism for leisure's associations with long-term health: when leisure is done more frequently, affective well-being is greater compared to moments with less frequent leisure, particularly when that leisure is social or active. With opportunities for leisure likely being limited among caregivers for this chronically stressed population, these results may suggest a way to optimize leisure experiences among this group.

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IMPACT OF ORAL HEALTH STATUS AND ORAL HYGIENE PRACTICES ON QUALITY OF LIFE AMONG LOW-INCOME SENIORS

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Associations exist between poor oral health status (POHS) and multiple health conditions among the elderly: localized infection and pain, increased risk of respiratory infections, under-nutrition, and unplanned weight loss. POHS has also been associated with challenges in ability to eat, speak clearly, and socialize, negatively impacting quality of life. A large proportion of older adults are unable to follow recommended teeth and denture hygiene practices due to limited income and lack of dental insurance. The goal of this research was to assess the oral health status of low-income seniors, as well as their oral health quality of life and self-care habits.

Data were collected from residents of low-income senior housing communities (LISHC) in a large Midwestern community. An oral health assessment was completed by Extended Care Permit Dental Hygienists. Nursing students collected the Oral Health Care Access and Behaviors and Oral Health Impact Profile (OHIP14). All data were collected on-site in March/April, 2017. Incentives were provided. Descriptive analyses were conducted, including risk ratios.

163 participants were recruited from 10 LISHCs. The average age of participants was 73 years; 80% females; 87% Caucasians; 92% single (never married, divorced or widowed); and 79% had high school degree or higher. 84% had Medicare enrollment; 35% had Medicaid enrollment; and 21% had dental insurance. 84% had some or all natural teeth and 29% reported denture use. 23% missed brushing teeth at least once a week; and 17% reported not cleaning denture at least once per week. 43% reported to be diabetic; and 48% reported to have had pneumonia. 22% had root fragments; 43% reported mild or severe inflammation on the Loe and Sliness Gingival Index. 88% had normal tooth mobility; and 49% were in need of dental care either urgently or within few weeks. Direct/unadjusted comparison showed that risk of eating discomfort was 12% higher among those with untreated root decay compared to those without untreated root decay; 87% higher among patients with painful mouth-ache compared to those without painful mouth-ache. Risk of embarrassment was 26% lower among denture users compared to those who did not use denture.

Findings from this study provide an overview of oral health status among low income uninsured seniors living in assisted housing. Preliminary findings suggest that quality of life could be impacted by the oral health status among our study population.

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SEEKING AND ATTAINED MEANING-IN-LIFE: ASSOCIATIONS WITH PSYCHOSOCIAL OUTCOMES AMONG BREAST CANCER SURVIVORS

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Perceptions of meaning have garnered increased attention as a potential resource for patients struggling with the burdens of cancer. Different dimensions of meaning appear to have distinct health correlates. This preliminary cross-sectional study examined how sought and attained global meaning are related to a range of psychosocial outcomes among breast cancer survivors. To overcome limitations in previous research, we carefully selected indices of meaning that avoided confounding with study endpoints (e.g., well-being). It was hypothesized that a stronger sense of attained meaning in life would be related to more favorable outcomes, whereas a protracted search for meaning well into the survivorship phase might be tied to poorer outcomes. Participants were nonmetastatic breast cancer survivors enrolled in a larger study, who were assessed a minimum of 6 months since completion of treatment (except endocrine therapy) and who were in married/committed relationships. Mean age was 58.1 years, mean time since diagnosis was 3.4 years, and 70.1% were receiving endocrine therapy. They completed validated measures of global meaning (Meaning in Life Q). Outcomes included emotional distress (Brief Symptom Inventory anxiety and depression), adjustment to cancer (Illness Cognition Questionnaire), body image (Body Image Scale), and illness-related stress (single item). In bivariate analyses, attained meaning was significantly associated with more favorable scores on all 6 outcomes (all p 's < .04). Conversely, greater search for meaning was related to worse emotional distress, illness-related helplessness, and body image difficulties (all p 's < .05). In multiple regression analyses that accounted for current endocrine therapy and any significant clinical or demographic covariates, attained meaning remained significantly associated with less distress ($\beta = -.49$, $p = .001$), less illness-related helplessness ($\beta = -.40$, $p = .01$), greater illness-related benefits ($\beta = .43$, $p = .008$), less body image disturbance ($\beta = -.39$, $p = .01$), and less illness-related stress ($\beta = -.48$, $p = .003$). In contrast, greater search for meaning was significantly associated with greater helplessness ($\beta = .45$, $p = .004$) and body image disturbance ($\beta = .46$, $p = .004$), and marginally greater emotional distress ($\beta = .31$, $p = .054$). Results of this preliminary study underscore the importance of evaluating discrete domains of perceived meaning, which have distinct associations with psychosocial outcomes. Seeking and found global meaning merit further attention in larger investigations using longitudinal designs.

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SELF-EFFICACY TO COMMUNICATE ABOUT SEX AND INTIMACY IN WOMEN TREATED FOR CANCER: AN INSTRUMENT DEVELOPMENT STUDY

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Background and Purpose: The sequelae of cancer treatment can negatively impact women's sexual wellbeing. Self-efficacy (confidence in one's ability to perform the steps of a designated task) is a component of Social Cognitive Theory, a key theory guiding health behavior interventions. Research on interventions for improving sexual wellbeing after cancer treatment reveals that self-efficacy is a key factor. The purpose of this study was to refine the Self-Efficacy to Communicate about Sex and Intimacy (SECSI) scale.

Methods: The initial self-efficacy instrument was developed from a comprehensive review of the literature and clinical experience with cancer survivors. A panel of four international content experts in self-efficacy scale development, women's sexual health, and partner communication after cancer treatment provided feedback about relevance, clarity and comprehensiveness of items using a standardized tool. Next, twenty adult women cancer survivors provided feedback via semi-structured cognitive interviews, as well as sociodemographic and clinical characteristics data. Each participant was asked questions regarding comprehension, clarity, and relevance of a random selection of items from the 25 item instrument. Data collection ended based on saturation of responses (no substantively new information being gathered) for all candidate scale items.

Results: Cognitive interview feedback was coded into seven categories: 1) irrelevant or unimportant, 2) didn't understand the question, 3) off-putting, 4) redundant, 5) not related to cancer, 6) makes assumptions, and, 7) wording too general and not consistent with (explained) intent. Based on the coded feedback, the research team revised wording of items and structure of the instrument. The final instrument is a 10-item list of statements scored on a Likert-type response scale and summed for a total score ranging from 0 to 40 regarding a woman's level of confidence in her ability to communicate with her partner about sex and intimacy in the context of cancer treatment.

Conclusions: Self-efficacy is an important predictor of behavior, and should be a focus of future study of sexual adjustment in survivorship. This study fills a need for development and validation of a standardized measure of self-efficacy for communication about sex and intimacy. The next step is to evaluate psychometric performance of the refined scale (internal consistency and test-retest reliability; construct validity).

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WELL-BEING ACROSS THE LIFE COURSE

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Background: The concept of wellbeing and how it changes across the life course is not clearly understood. The literature shows inconsistent results in terms of the association between age and wellbeing, partially due to different conceptualizations of wellbeing. In this study, we used a broad, multi-faceted 10 domain measure of wellbeing to investigate the following research questions: how is age associated with overall wellbeing?; how is age associated with each of the constituent domains of wellbeing?; and to what extent does age modify the contribution of the constituent domains to wellbeing?

Methods: 618 participants responded to the online Stanford WELL for Life Scale (SWLS score ranges from 0–100). The sample was predominantly female (75% female) and relatively highly educated (51% with 17+ yrs of education). Using previously established age categorizations (young adult: 18–35 yrs; middle aged: 36–55 yrs; older adults: 55+ yrs), linear regression was used to investigate the research questions.

Results: The association of age with wellbeing, after adjusting for education and gender, was positive and statistically significant ($p < 0.001$). Compared to the referent age group of 18–35 yrs, the estimated mean wellbeing score of a male with 17+ yrs of education was higher in the age group 36–55 yrs by 1.22 (95% CI 1.12–3.56) and was higher by 5.06 (95% CI 2.87–7.26) in the age group 55+ yrs. Age was also significantly associated with each of the constituent domains of wellbeing with the exception of exploration/creativity. Unexpectedly, participants aged 55+ yrs had higher scores on the constituent domains of wellbeing than in the two younger age groups. In only the lifestyle domain was the association between the domain and wellbeing statistically significantly modified by age. The lifestyle domain includes diet, sleep, physical activity, binge drinking and smoking. A unit increase in lifestyle score increased the wellbeing score by 2.97 (95% CI 1.97–3.97) in ages 18–35 yrs, but by 5.38 in ages 36–55 yrs (95% CI 4.03–6.73) and by 5.03 (95% CI 3.63–6.43) in ages 55+ yrs.

Conclusion: These results contribute to the growing literature finding higher than expected levels of wellbeing among older adults: older adults score higher on the SWLS compared to young adults and middle-aged adults. In addition, the results also added to the existing literature on older adults reporting a stronger sense of self and purpose and meaning. However, unexpectedly, older adults in our sample report being more socially connected and experiencing a higher level of physical health (measured here as having more vitality and energy). Further investigation is needed to explore these unexpected results.

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24-HOUR HEALTH BEHAVIOR: DAILY INTERACTION OF SLEEP AND WAKING HEALTH BEHAVIORS

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The consideration of health behaviors within a 24-hour context provides an important model for health promotion and intervention efforts. Although sleep has been shown to be associated with waking health behaviors, including exercise, alcohol consumption, caffeine use, and napping, research investigating the directional influence of night and day is scant and inconsistent. The current study sought to extend the literature by examining the daily, bidirectional relationships between sleep and waking health behaviors. Baseline data from a parent study were used for analyses. Participants ($N=384$) were college students who completed two weeks of a baseline assessment in which their objective sleep quality was assessed via Actigraphy and various waking health behaviors were self-reported via a bedtime sleep diary. Mixed linear models were used to test the daily, direct effects of waking health behaviors on subsequent night's sleep. Alcohol consumption was significantly associated with greater total sleep time (TST) and sleep onset latency (SOL), but predicted fewer awakenings ($p's < .05$). Drinking caffeine after 2PM significantly predicted less TST and longer SOL ($p's < .001$). Napping longer than 30 minutes was associated with greater SOL, wake after sleep onset (WASO), and number of awakenings ($p's < .05$). Mixed linear models were also used to test the daily, direct effects of sleep on next day health behavior. Longer TST significantly predicted less alcohol and caffeine consumption the following day ($p's < .001$). Contrary to expectation, more nighttime awakenings significantly predicted less alcohol and caffeine consumption the following day ($p's < .001$). Lastly, greater sleep efficiency significantly predicted less time spent napping the following day ($p=.036$). These results indicate that sleep and waking health behaviors hold a significant, bidirectional influence on one another and provide evidence for a 24-hour model of health behavior. Greater understanding of the temporal relationships between nocturnal and waking health behaviors can help identify targets for intervention and improve effective allocation of public health resources.

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CHASING Z'S: SLEEP QUALITY AND BEDSHARING IN TEEN MOMS

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Sleep is disrupted during pregnancy and the postpartum period (PPP) for adult women, and infant sleep location affects maternal sleep quality and may increase risk for infant mortality. However, little is known about sleep and co-sleeping practices of adolescent mothers, particularly low income, ethnically diverse populations. To fill that gap, data were gathered from a small sample of primiparous, pregnant adolescents, aged 15–19 years ($M=17.7$ yrs; $SD=1.4$ yrs), participating in a larger, longitudinal pilot study testing the feasibility of a multiple health behavior change intervention. The teens completed 2 home visits; they reported on demographics, completed the Pittsburgh Sleep Quality Index (PSQI) and 7 days of twice-daily sleep diaries (pre- and postpartum). Pre-partum (week 31): pregnant adolescents completed a standard sleep diary (quality, duration, etc.) and answered questions about bedsharing intentions ("Where [and why] do you plan for your baby to sleep once s/he is born?"). Postpartum (week 5 PPP): teen moms completed a standard sleep diary and reported on where the baby slept each night. Pre-partum results: The PSQI total score exceeded the "poor sleep" cut-off for 50% of teen moms, and 70% reported elevations on sleep disturbance. The modal problem was difficulty breathing. Average sleep duration varied greatly across moms (within-person means, range: 3-13hrs). Most (83%) mothers reported pre-partum intention to co-sleep (crib/bassinet in mother's room), and one indicated intention to bedshare (mother and baby on same sleep surface). Reasons for chosen infant sleep location include distance/access (70%), unprepared for baby (17%), and safety concerns (17%). Postpartum results: Again, average sleep duration varied greatly across moms (within-person means, range: 3-10hrs), with a varied list of disturbances (e.g., use bathroom, feel hot, pain). All mothers (100%) reported bedsharing for at least part of the night on at least one night, with a majority (80%) on 4+ nights. Reasons for PPP bedsharing: post-feeding/changing (80%), comfort baby (80%), feel close to baby (60%), safety concerns (40%), and other (20%). This is one of the first studies to focus on pre- and post-partum sleep and mother-infant bedsharing within the teen mom population. These findings have important implications for the care of teens and their families, including their medical and psychological teams, especially given the known risks of sleep disruption and bedsharing.

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CPAP TITRATION NON-COMPLETION: A PREDICTIVE CORRELATIONAL STUDY

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Background: Sleep loss is a global public health burden with far-reaching social, economic, and health consequences. Obstructive sleep apnea (OSA) causes fragmented sleep and OSA prevalence in adults, 30–70 years of age, approximates 26%. About 30% of those who are diagnosed with OSA drop the recommended CPAP treatment before initiation. In this study, the concept of *CPAP adherence* was expanded to include titration study completion as the first act of adherence. This study targeted a group that is rarely studied: the non-adherers.

Participants: Consecutively sampled, CPAP-naïve, newly diagnosed OSA patients ($N=155$) completed a battery of questionnaires the evening of their diagnostic polysomnography, before receiving educational information.

Methods: A predictive correlational study, using logistic regression, was conducted. Using valid and reliable surveys, cognitive concepts assessed were: (a) risk perception, (b) outcome expectancy, (c) self-efficacy, (d) locus of control, (e) health value, and (f) beliefs about OSA and CPAP. Physiological data were gathered from diagnostic sleep study results. Titration completion was assessed 90 days after diagnosis.

Results: Lower perceived risk scores ($OR=0.28$, $p=.028$), maladaptive beliefs about OSA and CPAP ($OR=0.87$, $p=.033$) and lower internal LOC scores ($OR=0.88$, $p=.045$) contributed significantly to titration non-completion prediction. The final regression model explained about 35 % of the variance in titration non-completion and 83.2 % of cases were correctly classified. Approximately 24 % of the participants did not complete a titration study within 90 days. Respiratory disturbance index (RDI) was implicated in titration non-completion prediction.

Conclusion: Participants' maladaptive beliefs about OSA and the CPAP treatment, and their lack of understanding of the risks associated with OSA, influence titration non-completion, even when measured before OSA diagnosis.

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'I WAS PARANOID MILLIPEDES WERE IN MY BED...' AND OTHER REASONS YOUNG ADULTS VOLUNTARILY RESTRICT THEIR SLEEP

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Approximately 32% of young adults report short sleep duration (< 7 hours/night). Much of the research to date has focused on inadequate sleep occurring as a result of sleep problems (e.g., sleep disorders, delayed sleep phase syndrome) or specific behaviors (e.g., technology use). The present study takes a broad approach to explore the prevalence of and reasons for voluntary sleep restriction in a sample of 272 undergraduates. Each morning for 2 weeks participants were asked, "Last night, what prevented you from going to bed when you wanted?", producing 3601 nights of data. Of these, participants indicated that their sleep had been restricted and provided reasons on 2088 nights (58%). Responses were coded and collapsed into 4 general categories: work/school-related restriction (e.g., work, homework), social-related restriction (e.g., time spent with family or friends), restriction due to sleep difficulties (e.g., illness, noisy environment), or activity-related restriction (e.g., technology use, sports, eating). Results indicated that sleep restriction was common and variable. Only 4% of participants reported no sleep restriction over the study period, whereas approximately 70% of participants reported sleep restriction on more than half of the nights, including 18% who reported sleep restriction every night. The reasons given for sleep restriction were reported at similar rates, with frequencies ranging from 21–31% of restricted nights. Further, almost 2/3 of participants reported reasons for their sleep restriction that represented 3 or more categories, suggesting that, for many, sleep restriction is the result of a complex rather than singular cause. Although actigraphy-assessed total sleep time was shorter on nights that participants reported sleep restriction, the difference between restricted and non-restricted nights was relatively small (10–16 minutes), and average total sleep time did not reach the recommended 7 hours even on unrestricted nights. Taken together, these findings provide novel insight into the obstacles to healthy sleep. Our findings show that, among young adults, sleep restriction is common, results from multiple causes, and contributes to shorter sleep duration. Efforts to improve sleep health in young adults, therefore, might consider time management to promote healthy sleep.

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ASSOCIATIONS AMONG SLEEP, BODY MASS INDEX, WAIST CIRCUMFERENCE AND RISK OF TYPE 2 DIABETES AMONG US CHILDBEARING WOMEN

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Objective. Women of childbearing age present an important group for understanding sleep and few studies have focused on this population. To our knowledge, no study has investigated the associations among sleep, overweight/obesity and risk of type 2 diabetes (T2D) among childbearing age women in the National Health and Nutrition Examination Survey (NHANES). We hypothesized that sleep duration and quality will be negatively associated with body mass index (BMI), waist circumference (WC) and 2-hour oral glucose tolerance test (OGTT).

Methods. Data were from NHANES, 2005-2008. The study population consisted of 18-44 year old women. Pregnant women and those diagnosed with sleep disorders were excluded. Sleep duration and quality were self-reported by women. Sleep quality was measured using three indicators: latency, disturbances and daytime dysfunction (Cronbach $\alpha=0.81$). BMI, WC measurements and a 2-hour 75 g OGTT were performed by trained NHANES staff. To assess the associations between sleep and BMI, WC and 2-hour OGTT, three linear regression analyses with survey weights were computed for each outcome: 1) an unadjusted analysis, 2) one adjusted for demographic variables only (partially adjusted analysis: age, ethnicity and education) and 3) one adjusted for demographics and variables associated with obesity/T2D (fully adjusted analysis: depression, total energy intake, moderate- and vigorous-intensity physical activity, screen time, smoking, alcohol, antidiabetic and obesity treatment medications).

Results. Total sample consisted of 2388 childbearing age women. The average sleep duration was 7 hours per night and the average score for sleep quality was 8 on a scale from 0 to 23, indicating an overall good sleep quality. Only sleep duration was significantly associated with BMI and WC in the unadjusted ($\beta = -0.12$; $p = 0.0001$; $R^2 = 0.02$ and $\beta = -0.13$; $p < 0.0001$; $R^2 = 0.02$) and partially adjusted ($\beta = -0.10$; $p = 0.0015$; $R^2 = 0.05$ and $\beta = -0.11$; $p = 0.0002$; $R^2 = 0.06$) models, but was no longer significant in the fully adjusted model ($p > 0.05$). Neither sleep duration nor quality were significantly associated with 2-hour OGTT in any of the models (all $p > 0.05$).

Conclusions. Targeting sleep duration and sleep quality alone would not likely contribute to significantly lowering BMI, WC or risk of T2D in US childbearing age women. Additional studies, especially longitudinal ones, with both self-reported and objective measures of sleep are needed to confirm the present findings.

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SELF-REPORTED SLEEP DURATION AND CORTISOL REACTIVITY TO SOCIAL EVALUATIVE THREAT

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Insufficient sleep is reliably associated with increased risk for depression, diabetes, cardiovascular disease and premature mortality. Activation of the hypothalamic pituitary adrenal (HPA) axis during stress, especially stress that involves social evaluative threat, represents one mechanism linking short sleep duration with adverse health outcomes. Empirical studies have produced inconsistent results when testing associations between short sleep and HPA axis activation when stressed. These inconsistent findings may be due to the fact that the most widely used social evaluative stressors involve both threats to status (e.g. achievement and influence) and acceptance (e.g. inclusion and connection with others). The current study addressed prior inconsistent results by evaluating the content of social evaluative stress through experimental manipulation of status and acceptance threats. Ninety-seven healthy participants ($M_{age} = 22.8$ years; 48% female) rested quietly for 10 minutes and then participated in a modified Trier Social Stress Test (TSST) that included 1 of 4 conditions (status threat, acceptance threat, combined status and acceptance threat, or control condition). Following the modified TSST, participants rested quietly for 5-minutes. Prior night sleep duration, minutes since awakening and height and weight were assessed prior to baseline. Salivary cortisol was measured at baseline, 5 minutes after conclusion of the stress task, and 10 minutes later. Reactivity was calculated as task minus baseline value. In multiple regression analyses controlling for age, gender, race, BMI and minutes since awakening, sleep duration was negatively associated with cortisol reactivity during the combined status and acceptance threat condition ($\beta = -.31$, $t = -2.74$, $p < .01$), the status condition ($\beta = -.27$, $t = -2.52$, $p < .05$) but not the acceptance condition ($\beta = -.20$, $t = -1.89$, $p = .06$). For the control condition, sleep duration was unrelated to cortisol reactivity ($\beta = -.13$, $t = -1.23$, $p = .22$). In the current study, short sleep duration was associated with HPA axis activation during both the combined threat and status threat conditions. These results replicate prior associations between short sleep and HPA axis activation to social stress and suggest that threats to status may be particularly impacted by short sleep duration. Ultimately, these findings may have implications for future studies linking short sleep duration and health through stress pathways.

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SLEEP IN YOUNG ADULTS: PRE-SLEEP TECHNOLOGY USE, AROUSAL, AND HYGIENE IN RELATION TO SLEEP DISTURBANCE AND INSOMNIA SYMPTOMS

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Introduction: The importance of a good night's sleep to health outcomes is well-documented in clinical sleep research. Less is known about patterns of sleep behavior in non-clinical populations. Young adults are the fastest growing group reporting poor sleep. This, in part, may be related to the increase in the use of electronic devices prior to sleep (Gradisar et al., 2015; Levinson et al., 2017). This study examined relationships among pre-sleep technology use, arousal, and sleep hygiene with sleep disturbance and insomnia symptoms.

Participants: Young adults (N=249) from diverse backgrounds (63.7% White; 8.1% Hispanic); 68.7% female; age range 18–24 years ($M=19.06$; $SD=1.45$).

Procedure: Self-administered electronic survey. Demographics, sleep quality (PSQI – Buysse et al., 1989), insomnia severity (ISI – Morin et al., 1987), pre-sleep technology use (NNSF, 2011), pre-sleep arousal (PSAS – Nicassio et al., 1985), sleep hygiene (SHI – Mastin et al., 2010), and sleep-related worry (Sunnhed & Jansson-Fröjmark, 2014). All scales indicated strong internal reliability ($\alpha = 0.76 - 0.93$).

Results: Surprisingly, poor-quality sleep (PSQI > 5) was reported by 88.8% of participants and 35% met the criteria for subthreshold or clinically significant insomnia symptoms. Females were more likely than were males to report poor sleep quality [$t(247)=-2.03$, $p < 0.05$]. The majority (83%) used three or more electronic devices in the hour before sleep, with 95.2% reporting sleeping with their mobile phones on or next to their beds, and 25.8% reporting regular awakenings during the night due to cell phone alerts. Correlations were observed in expected directions. Regression analyses indicated that female gender, sleep related worry, and pre-sleep arousal were significant predictors of sleep quality ($R^2=.38$, $p<.01$) and insomnia symptoms ($R^2=.30$, $p<.01$). Furthermore, number of devices and pre-sleep laptop use predicted pre-sleep arousal ($R^2=.06$, $p<.05$).

Conclusion: Technology use prior to bed and reports of poor quality sleep were overwhelmingly endorsed. Findings suggest that the relationship between technology use and sleep among young adults is complex. However, device usage in the hour prior to sleeping was associated with pre-sleep arousal and sleep-related worry, which have demonstrated relationships with poor sleep among clinical samples. Future research will benefit exploring the directionality and causality of these associations.

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THE EFFECTS OF APP-DELIVERED CBT FOR INSOMNIA ON SLEEP QUALITY, DYSFUNCTIONAL BELIEFS, AND SLEEP HYGIENE

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Sleep quality is correlated with physical and mental health (Ohayon et al., 2017). Cognitive Behavioral Therapy for Insomnia (CBT-I) is an evidence-based strategy to improve sleep quality; however, shortage of qualified providers, logistical issues such as cost, travel, and time, privacy concerns, and a desire to resolve symptoms on one's own limit access to CBT-I. Compared to traditional face to face or web-based delivery of CBT-I, app-delivered CBT-I may be an efficacious alternative capitalizing on the portability, privacy, and accessibility of mobile phones. Interventions involving smart phones, including mobile apps, are readily accessible as smartphone usage has steadily increased with over three-quarters (77%) of American adults currently owning smartphones, an increase from 64% in 2015 (Pew Research, 2017). The present study examined the effectiveness of the CBT-I Coach for educating participants about the importance of healthy sleep practices, dysfunctional beliefs about sleep, and targeting sleep quality among participants ($N=25$, mean age $M=22$, $SD=8.867$) from a midsize Midwestern University. Participants completed surveys assessing sleep quality (PSQI; Buysse, Reynolds, Monk, Berman, & Kupfer, 1989), dysfunctional beliefs about sleep (DBAS; Morin, Vallieres, & Ivers, 2007), and sleep hygiene behaviors (SHPS; Yang, Lin, Hsu, & Cheng, 2010). Participants completed sleep diaries every day over a 4-week time period before and during their use of the CBT-I Coach app. When pre- and post-test measures of sleep quality (pre-test $M=7.52$, $SD=3.36$; post-test $M=5.6$, $SD=2.42$), beliefs about sleep (pre-test $M=4.76$, $SD=1.71$; post-test $M=4.01$, $SD=1.24$), and sleep hygiene behaviors (pre-test $M=3.53$, $SD=0.89$; post-test $M=3.04$, $SD=0.69$) were compared, a significant improvement was found across all factors (PSQI $t(24) = -3.842$, $p=.001$; DBAS $t(24) = -2.995$, $p=.006$; SHPS $t(24) = -3.783$, $p=.001$). Findings suggest that app-delivered CBT-I can aid in improvement of sleep quality and target both the cognitive and behavioral components of sleep supporting both feasibility and efficaciousness of app-delivered treatment. This is especially important for those who do not have sleep difficulties that are severe enough for them to seek more formalized treatments and for those who cannot access face-to-face treatment due to personal and logistical barriers.

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ASSESSMENT OF SELF-REPORTED SLEEP PROBLEMS AND PHYSICAL HEALTH SYMPTOMS IN ADULT PSYCHIATRIC INPATIENTS

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Sleep is an important determinant of physical and mental health. Despite evidence that psychiatric inpatients may be at increased risk for both poor sleep and clinically significant physical symptoms, the relationship between these variables is not well understood in this population. The goal of this study was to assess the relationship between sleep problems and physical health symptoms in a sample of adult psychiatric inpatients, and evaluate the utility of a brief sleep disturbance measure as a predictor of physical health symptom severity.

Ninety-five adults were assessed upon admission to an inpatient psychiatric hospital. Demographic and medical information were extracted via chart review. Participants completed the PROMIS Sleep Disturbance Measure – Short Form, the PROMIS Depression Measure – Short Form, the DSM-5 Cross-Cutting Symptom Measure (CCSM), and the Patient Health Questionnaire – Physical Symptoms measure (PHQ-15). PHQ-15 scores were dichotomized to reflect low versus medium/high severity of physical symptoms. A hierarchical binomial regression was conducted predicting severity of physical symptoms from sleep disturbance scores, while controlling for gender, depression scores, presence of psychotic symptoms, number of medications prescribed, number of psychiatric diagnoses, and whether the participant was undergoing detoxification during hospitalization.

Fifty percent of participants reported medium/high levels of physical health symptoms, and 41% of participants reported moderate/severe levels of sleep disturbance. A positive screen on the CCSM Somatic Symptoms domain was a significant predictor of more severe physical symptoms ($\exp(\beta) = 3.096$, $p = 0.036$, 95%CI [1.07, 8.93]). When sleep disturbance scores were added, the model accounted for significantly more variability in physical symptom severity ($\Delta R^2 = 0.096$, $\chi^2 = 9.202$, $p = 0.002$), and the CCSM Somatic Screener was no longer a significant predictor ($\exp(\beta) = 2.730$, $p = \text{n.s.}$, 95%CI [0.88, 8.47]). Sleep disturbance scores independently predicted a significant share of physical symptom severity ($\exp(\beta) = 1.112$, $p = 0.005$, 95% CI [1.03, 1.20]).

A significant proportion of psychiatric inpatients in this sample reported moderate/high levels of physical health symptoms and poor sleep, and greater sleep disturbance was a significant predictor of somatic symptom severity. The brief PROMIS Sleep Disturbance Measure was a better predictor of physical health symptoms among psychiatric inpatients than the CCSM alone.

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INCREASED SLEEP EFFICIENCY THROUGH HEAT THERAPY AND EXERCISE

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Regular physical activity is widely accepted as a viable form of behavioral medicine for the prevention and treatment of cardiovascular disease (e.g., reducing blood pressure). Recent evidence also indicates heat therapy (saunas, heated blankets, warm baths, and infrared therapy) can elicit benefits similar to physical activity. Both heat therapy and exercise interventions can independently improve sleep quality but the additive effects of combined interventions are unclear. In a pilot randomized control trial participants received 14 weeks of supervised, regular (3x/week) moderate intensity aerobic activity (50 minutes) followed by either sessions in a same-sex steam-room located in a locker-room ($n=21$) or time-matched quiet seated rest in a lobby of a fitness facility ($n=20$). Participants were recruited via electronic advertisements and subsequently screened for depression, cognitive impairment, and untreated pre-hypertension (auto-BP device confirmed 120–139 mmHg systolic blood pressure [BP] / 80–89 mmHg diastolic BP). A battery of psychosocial questionnaires (including the Pittsburg Sleep Quality Index [PSQI]) was assessed at baseline and month 4 follow-up. Participants were mostly non-Hispanic White (73.2%) women (58.5%), with a college/advanced degree (75.6%). At baseline, the majority were overweight or obese (BMI $M=32.92$, $SD=8.28$) and non-smokers (24.4% had a history of smoking or currently smoke). In an exploratory analysis, a univariate test of our hypothesis showed no difference between groups in PSQI composite score change. Similarly, change from pre- to post intervention in sleep efficiency (self-reported sleeping hours / hours spent in bed) was not statistically significant (86.41% vs. 84.31%). However, after adjusting for treatment dose (total visits), and factors known to impair sleep (depression, BMI), we found a significant group effect indicating improvement in sleep efficiency in favor of the steam group ($p = .02$, $\eta^2 = .14$). Specifically, participants in the steam condition were 7.68% more efficient. After adjusting for smoking history/current smoking status and overall program compliance with American Heart Association recommendations for alcohol consumption (less than or equal to 1 alcoholic beverage per day), the group effect was attenuated somewhat ($p = .06$, $\eta^2 = .10$). There were no statistically significant differences between steam and rest groups in session attendance (30.62 vs. 36.60 sessions; overall compliance = 80%) or frequency of evening sessions (61.90% vs. 65.00% sessions held after 5pm). Together, these findings add to the growing literature on the benefits of heat therapy as a standalone or adjuvant therapy with other evidence-based treatments (exercise) for improving sleep efficiency.

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SHORT SLEEP DURATION AND BEHAVIORAL RISK FACTORS FOR PREMATURE MORBIDITY AND MORTALITY

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Behaviors such as smoking, alcohol use, physical inactivity, and poor diet are established risk factors for increased morbidity and early mortality, and there is now convincing evidence that short sleep duration is as well. These risk factors are often examined in isolation; however, their aggregation may better reflect risk for poor health outcomes. This secondary data analysis had two aims: 1) to understand whether health behaviors vary more between people or between days; and 2) to examine whether and how these health behaviors aggregate with short sleep duration. To test these aims, a community sample of 213 participants recruited for the Pittsburgh Cold Study 3 ($M_{age}=30.13$ years; 57% male; 66% White) completed a health behavior diary and wore a wrist actigraph for 14 consecutive days. Health behaviors were quantified as the daily number of cigarettes smoked ($M=3.81$), alcoholic drinks consumed ($M=3.49$), fruits and vegetables consumed ($M=10.48$), and minutes exercising ($M=26.13$). Wrist actigraphy data were used to categorize sleep duration ($M=5.87$ hours) as short (6 hours, $n=75$). To test the first aim, multilevel modeling assessed the proportion of variance between people versus within days. In multilevel models, we found that levels of physical inactivity, fruit and vegetable consumption and alcohol were more a function of the day than the person (% of variance accounted for within person was 76%, 74% and 64% respectively; $p=.06$). To test the second aim, a principal components analysis revealed a two-factor solution among short sleepers, alcohol consumption and smoking comprised 1 component and physical inactivity and fruit and vegetable consumption comprised a second component (all loadings greater than .66; accounting for 61% of cumulative variance). Among adequate sleepers, smoking and fruit and vegetable consumption comprised 1 component and physical inactivity and alcohol consumption comprised a second component (all loadings > absolute value of .63; accounting for 57% of variance). These results suggest that most health behaviors are a function of day rather than person, and that both healthy and unhealthy behaviors aggregate among short sleepers, but are less likely to aggregate among those obtaining adequate sleep. These findings help us better understand the potential aggregation of behavioral risk factors with short sleep.

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SLEEP DIFFICULTIES INTERACT WITH AGE IN PREDICTING COGNITIVE PERFORMANCE AMONG PATIENTS WITH HEART FAILURE

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Background: Impaired cognitive function is common among patients with heart failure (HF), with deficits observed across several domains, including executive functioning, attention, and memory. Older age is also associated with increasing cognitive impairment. Sleep disturbance is common in HF patients and is generally more common in older adults. This study was designed to evaluate the influence of age (and education) on cognitive functioning in HF patients, and to determine the degree to which self-reported sleep difficulties influence the relationship. It was hypothesized that older age and lower education would be associated with worse cognitive performance in HF patients, and that self-reported sleep difficulties would moderate these relationships.

Methods: Thirty-three patients with HF (mean age = 56.4 ± 9.9 years; age range = 38 to 75 years; 21 males; mean education = 14.1 ± 3.0 years) referred for comprehensive neuropsychological evaluation completed the California Verbal Learning Test (CVLT) and the Trail Making Test (TMT). The CVLT assesses verbal learning and memory and provides subscale scores for short and long delay, free and cued recall, and recognition. The TMT is comprised of two parts, A and B, measuring visual search, attention, and motor functioning, as well as higher-order executive functioning. Patients also completed an intake questionnaire detailing demographics (i.e. age, gender, education level) and presence of sleep difficulties (yes/no). Hierarchical regression analyses were performed to predict performance on the CVLT and TMT from age and education level, as well as the interaction of those variables with self-reported sleep difficulty.

Results: Neither age nor education level was associated with CVLT or TMT performance ($ps > .05$). However, there was a significant interaction of sleep difficulty with age in predicting performance on each CVLT subscale (range of β s = -16.68 to -15.63, all $p < .05$, range of Model R^2 s = 0.27 to 0.29, all $p < .03$) and TMT part B ($\beta = -13.08$, $p = .04$, Model $R^2 = 0.17$, $p = .13$), reflecting that endorsement of sleep difficulties worsened the relationship of older age to poorer cognitive performance in HF.

Conclusions: These data underscore the importance of sleep disturbances among patients with HF. In these patients, the negative effects of illness and older age are exacerbated by difficulty sleeping, particularly in the domains of verbal learning, memory, and executive functioning. Thus, addressing sleep complaints among patients with HF may be beneficial both for physical health and for cognitive functioning.

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SLEEP DURATION AND METABOLIC CONDITIONS AMONG US OLDER ADULTS: ANALYSIS OF THE NATIONAL HEALTH INTERVIEW SURVEY

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BACKGROUND: Metabolic conditions are on the rise among older adults. Sleep behavior may modify risk of metabolic conditions. We hypothesized that age may moderate associations between sleep duration and metabolic conditions. It is unclear whether the relationship between duration and metabolic syndrome is stronger with morbidity in comparison to younger vs. older adults. This study explored associations between sleep and metabolic conditions among white and black older and younger adults.

METHODS: Data were collected from the 2004–2013 National Health Interview Survey (NHIS). We established an unhealthy cohort (reporting at least one of four conditions: obesity, dyslipidemia, diabetes, and hypertension) and healthy cohort (none). Morbidity burden was defined as: 1 (1/4 conditions) to 4 (4/4 conditions). We defined recommended sleep (7–8 hours), short sleep (< 6 hours) and long sleep (> 9 hours). Sex, race, exercise, smoking and alcohol use were covariates. Students T-tests and ANOVA were used for group mean comparisons (18-65-younger vs. 66-85-older). A logistic regression adjusting for age, SES, education, smoking, alcohol use, BMI, exercise, hypertension, diabetes, dyslipidemia was performed in a step-wise model to test associations between sleep duration and morbidity.

RESULTS: Among older adults, 56.4% were female and 81.7% were white. Among younger adults, 52.0% were female and 76.5% were white. Sleep duration was longer for older adults (7.49 ± 0.01) compared with younger adults (7.08 ± 0.01) ($p < .01$). Among the healthy cohort ($N=15765$), 20% reported short sleep and 7% reported long sleep. Among the unhealthy cohort ($N=49,675$), 30.2% reported short sleep and 9% reported long sleep. Older adults were less likely to report short sleep [OR=0.92, 95% CI=0.89–0.95, $p < 0.01$], but were more likely to report long sleep [OR=1.89, 95% CI=1.80–1.98, $p < .01$]. Unhealthy older adults had two-fold greater odds of reporting long sleep ($p=0.01$), but were not significantly more likely to report short sleep (5% lower odds; $p=0.09$), relative to unhealthy younger adults. Older adults were less likely to be short sleepers, but were more likely to be long sleepers.

CONCLUSION: Study results show age differences in sleep duration and that age has a significant effect on the association between sleep duration and metabolic conditions. Compared to younger adults, older adults were at an increased risk for long sleep and at a decreased risk for short sleep. Future studies should explore this relationship further.

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SLEEP IN CARDIAC PATIENTS: MEASUREMENT STRUCTURE AND PREDICTION OF HEALTH FUNCTIONING OVER 6 MONTHS

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BACKGROUND: Sleep problems appear common and associated with health outcomes among cardiac patients. Nevertheless, few studies have examined the measurement structure of sleep among cardiac patients and whether different sleep dimensions may be associated with health functioning. This study aims to (1) employ confirmatory factor analysis (CFA) to examine the measurement structure of the Pittsburgh Sleep Quality Index (PSQI) among cardiac patients, and (2) investigate whether different sleep dimensions would predict physical and mental health functioning over a 6-month period.

METHODS: Participants were 223 cardiac patients (mean age = 63.0 [SD = 8.5]; 19% women) from a community-based cardiac rehabilitation program, among whom 166 also completed a follow-up at 6 months. Participants completed the PSQI and a cardiac-specific quality-of-life measure assessing both physical health and mental health functioning. The CFA was applied to evaluate the 1-, 2-, and 3-factor structure of the PSQI. Hierarchical multiple regression analyses were conducted to examine whether the sleep dimensions derived would predict physical and mental health functioning at the baseline and at 6 months. All regression models were adjusted for age, gender, education level, body mass index, and months in rehabilitation. For models predicting 6-month health functioning, the baseline health functioning was also included as a covariate in order to examine predictors of change.

RESULTS: On the basis of the PSQI scores, 68% of the patients reported sleep disturbances. The CFA of the PSQI demonstrated that the 2-factor solution fitted the data most optimally ($\chi^2 [8] = 14.01$, $p = .08$; CFI = .98; RMSEA = .07), with a sleep efficiency factor (sleep duration and habitual sleep efficiency) and a sleep quality factor (subjective sleep quality, latency, disturbances, and daytime dysfunction). The single-factor structure showed a poor fit ($\chi^2 [9] = 53.48$, $p < .01$, CFI = .88; RMSEA = .17), and the 3-factor structure did not show a better fit than the 2-factor one. Cross-sectionally, after controlling for covariates, both sleep quality and sleep efficiency were significantly associated with better physical health (sleep quality $\beta = .45$, sleep efficiency $\beta = .17$, $ps < .01$) and mental health function (sleep quality $\beta = .43$, sleep efficiency $\beta = .17$, $ps < .01$). At 6 months, after controlling for baseline health functioning ($\beta_s = .64$ to $.74$ in models, all $ps < .001$) and other covariates, only higher sleep quality independently predicted increased physical health ($\beta = .13$, $p < .05$) and mental health functioning ($\beta = .11$, $p < .05$), whereas sleep efficiency ($\beta_s = .05$ and $.01$, respectively, $ps > .10$) did not.

CONCLUSIONS: Findings highlighted the importance of evaluating sleep and assessing different sleep components among cardiac patients. Sleep quality appeared to be a better predictor of greater improvement of both physical and mental health functioning over time.

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SUMMERTIME SLEEP VARIABILITY AMONG URBAN MINORITY YOUTH: DIFFERENCES BETWEEN UNSTRUCTURED AND STRUCTURED SETTINGS

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Summertime has emerged as a high-risk period for short sleep (Nixon et al., 2008) and weight gain (Von Hippel & Workman, 2016). A lack of daily structure during the summer months may contribute to weight gain via obesogenic behaviors, including disrupted sleep (Brazendale et al., 2017). Summer programming though may provide structure that can address concerns about disrupted sleep. This study will be the first to compare sleep variability (e.g. night-to-night fluctuations in sleep timing) among a sample of urban, minority youth when engaged in summertime programming (structured) versus no programming (unstructured). Relations between sleep variability and body mass index (z BMI) will also be examined.

Participants were 77 urban, minority girls ages 10–14 ($M=11.8$, $SD=1.01$) enrolled in a community-based summer program. Data were collected prior to the start of programming (unstructured; T1) and during the final week of programming (structured; T2). Sleep was measured using Actigraph GT3X Tri-Axis Accelerometer. Inclusion criteria were 3 or more weekday nights of sleep data. Using standard procedures, nightly variability (NV) was characterized for three indices: (1) sleep onset (SO), (2) sleep duration (SD), and (3) wake time (WT) by creating difference scores from night to night (e.g. [night1 - night2] [night2 - night3], etc.) then averaging these differences (Suh et al., 2012).

Participants recorded large fluctuations in all indices of NV across both structured and unstructured settings. In the unstructured setting, SO was at 12:15AM (NV= 1 hr 6 min), WT at 9:02AM (NV=1 hr 9 min), and SD was 8 hr 49 min (NV=1 hr 41 min). In the structured setting, participants exhibited a shift to earlier sleep schedules (reflected in both earlier SO and WT), but similar nightly sleep variability. Specifically, SO was 11:09PM (NV=1 hr 11 min), WT was 7:39AM (NV=1 hr 11 min), and SD was 8 hr and 32 min (NV=1 hr 38 min). During the unstructured setting, WT variability was inversely related to z BMI ($b=-.37$, $t(48)=-2.74$, pz BMI). None of the NV indices were associated with z BMI during the structured setting. These discrepant findings suggest the need for further investigation of sleep timing, its variability, and contribution to excess weight gain during the summertime.

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MERITORIOUS AWARD WINNER

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THE EFFECTS OF DAILY CAFFEINATED ENERGY DRINK USE AND CAFFEINE ABSTINENCE ON SLEEP AMONG YOUNG ADULTS

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Caffeine is the most widely used psychoactive drug in the world and is the primary active ingredient in Energy Drinks (EDs). Controlled research has shown that caffeine disrupts planned sleep, with greater effects observed at greater doses and when taken closer to bedtime. Given the popularity of EDs, understanding the effects of caffeinated EDs on sleep among young adults under naturalistic conditions is of great importance. This study investigated the effects of normal dietary doses of caffeine (200 mg) taken early in the day (before 3pm) on sleep functioning in a sample of young adults. The effects of caffeine abstinence on sleep were also evaluated. Thirty-six (44% female) light caffeine consumers participated in the 6-week within-subjects study. One week of baseline monitoring (week 1) was followed by one week of placebo ED ingestion (week 2), three weeks of caffeinated ED ingestion (weeks 3–5), and another week of placebo ED ingestion (week 6). Participants completed measures three times per day, including total sleep time (TST), sleep onset latency (SOL), and subjective sleep quality. Statistical analyses involved running a series of hierarchical linear models. The effects of caffeinated EDs were examined by comparing placebo weeks (weeks 2 and 6) to caffeine weeks (weeks 3–5). Caffeine abstinence effects were assessed by comparing week 2 (placebo) to week 6 (placebo after three weeks of caffeine). The last three days of week 5 (caffeine) were compared to the first three days of week 6 (placebo) when the greatest caffeine withdrawal effects were expected. Total sleep time was significantly less during caffeine weeks compared to placebo weeks ($\gamma_{10} = -19.80$, $p < 0.006$). Placebo ED ingestion after three weeks of daily caffeine resulted in shorter SOL compared to the first placebo week ($\gamma_{10} = -4.43$, $p < 0.059$) demonstrating a caffeine withdrawal effect. Acute caffeine abstinence (first three days of week 6 compared to last three days of week 5), produced greater TST ($\gamma_{10} = 52.28$, $p < 0.009$), shorter SOL ($\gamma_{10} = -5.47$, $p < 0.05$), greater sleep quality ($\gamma_{10} = 0.234$, $p < 0.038$), and feeling more rested ($\gamma_{10} = 0.218$, $p < 0.041$). This study is among the first to show a direct causal link between caffeinated ED consumption and sleep disturbance among young adults. These findings call for further investigation of the effects of caffeine on young adults and have implications for the regulation of caffeine content in EDs and other products.

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THE IMPACT OF SLEEP QUALITY ON COLLEGE STUDENTS' APPETITIVE BEHAVIOR

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Introduction: Sleep disturbance is a common problem among the college student population, with as many as 73% reporting at least occasional sleep difficulties. Lack of sleep amplifies the brain's reactivity to rewarding stimuli; however, it is unknown if students with poor quality sleep experience subsequent sensitivity to the hedonic aspects of the food environment, which could result in overeating. Symptoms of depression could also play a role. Investigating the poorly understood factors that influence reward-based eating is important for the development of interventions designed to improve college student health.

Method: 1,525 undergraduates participated in an online survey regarding college student health. Participants completed the Power of Food Scale (PFS), the Pittsburgh Sleep Quality Index (PSQI) and the Patient Health Questionnaire – 9 (PHQ-9). We examined the association between subjective sleep quality and the appetitive drive to consume easily-accessible, highly palatable foods (the PFS) and examined the indirect effect of depression on this relationship using the PROCESS macro. We controlled for possible covariates including gender and race/ethnicity in all analyses.

Results: Regression analyses were used to examine the mediating effect of depressive symptoms on the relationship between subjective sleep quality and appetitive behavior. Results indicated that sleep quality was a significant predictor of depression ($b = 0.44$, $SE = 0.02$, $p < 0.05$), and that depression was a significant predictor of appetitive behavior ($b = 0.51$, $SE = 0.09$, $p < 0.05$). After accounting for depressive symptoms as a mediator, sleep quality had a significant direct effect on appetitive drive ($b = 0.24$, $SE = 0.07$, $p < 0.05$). The indirect effect of depression on this relationship was tested using the bootstrapping estimation method with 5000 samples. The results indicated that the indirect effect of depression was significant ($b = 0.22$, $SE = 0.04$, $CI = 0.14, 0.31$).

Discussion: Results found that subjective sleep quality was significantly associated with appetitive drive, and that depression was a significant partial mediator of this relationship. These results suggest that poor quality sleep could increase consumption of high-calorie foods among college students, partially due to depressive symptoms. Future studies should focus on determining if the influence of disturbed sleep on appetitive drive results in unhealthy eating behaviors, and utilize longitudinal data.

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THE MODERATING ROLE OF THE NEIGHBORHOOD ENVIRONMENT FOR CHILDREN'S PHYSICAL ACTIVITY OVER TIME

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Introduction: Evidence to support the association between the neighborhood environment and physical activity levels has increased in recent years. A number of studies have examined whether the association between aspects of the neighborhood environment and physical activity varies by demographic characteristics. Fewer studies have gone beyond demographic characteristics and examined specific individual and interpersonal psycho-social characteristics that may interact with environmental characteristics to predict physical activity.

Methods: Over a thousand fifth grade students from 21 elementary schools were enrolled. Participants were followed from elementary to middle school and measured again in 6th and 7th grades. Participants were asked to complete a questionnaire, had anthropometric measurements taken, and received an accelerometer to assess physical activity each year. The student's parent/guardian also completed a questionnaire each year. Two methods were used to assess attributes and features of the neighborhood environment: a windshield survey of each participant's street segment and audits of the physical activity resources in the neighborhood. Growth curve analyses with total physical activity as the dependent variable were completed adjusting for race, gender, neighborhood socio-economic status, and children nested in schools.

Results: Two significant three-way interactions (i.e., time*neighborhood environment* individual and interpersonal psycho-social characteristics) were found. There was a significant three-way interaction between time, neighborhood environment and child reported equipment in the home as well as a significant three-way interaction between time, neighborhood environment and parent-reported parent support for physical activity. In addition, there was a significant two-way interaction between child-reported perception of parental support for physical activity and time as well as a significant two-way interaction between child-reported perception of parental support for physical activity and neighborhood environment. There were two additional variables with a significant interaction with time including self-schema for physical activity and child-reported perception of parental encouragement for physical activity.

Conclusions: This study found significant moderating effects of the neighborhood environment in the relationship between individual and interpersonal psycho-social characteristics and physical activity over time. Simultaneously considering the neighborhood environment and individual and interpersonal psycho-social characteristics can help improve our understanding of the reasons for declines in physical activity over time and provide information to help develop interventions to maintain physical activity levels in children.

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COMT VAL158MET (RS4680) GENOTYPES MODERATE THE ASSOCIATION BETWEEN CAREGIVER STRESS AND THE CORTISOL AWAKENING RESPONSE

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Background: *COMT* Val158Met (rs4680) genotypes have recently been shown to be associated with cortisol response to psychological stress. Caregiving is a recognized stressor that is associated with numerous health outcomes, with neuroendocrine functioning considered one likely mediator.

Methods: We examined allelic variation in *COMT* Val158Met (rs4680) as a moderator of the association between stress of caregiving for a relative with Alzheimer's Disease or other dementia and the salivary cortisol awakening response (CAR) in 158 adult caregivers and 155 controls. General linear models were used to test whether the association between caregiver stress and CAR differed across rs4680 (Met/Met, Val/Met, Val/Val) genotypes.

Results: Homozygous Met allele caregivers displayed the largest CAR, while Met allele homozygotes who were not caregivers displayed the lowest CAR ($p = 0.006$). In contrast, Val/Val homozygotes displayed an essentially opposite pattern of response.

Conclusions: The finding for Met allele homozygotes is consistent with prior observations that the Met allele is associated with poorer emotional control. The reverse pattern among Val/Val homozygotes is less well explained by prior research. Replication and extension of this work will be required to elucidate the interpretation of this finding.

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EFFECTS OF REJECTION SENSITIVITY ON PHYSIOLOGICAL STRESS REACTIVITY, DEPRESSION, RELATIONSHIP SATISFACTION & HEALTH

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Rejection sensitivity (RS), the tendency to over perceive rejection from others and react strongly, has been linked to a number of negative relational, psychological, and neuroscientific variables. Less is known about the physiological effects of RS, particularly cardiovascular reactivity in response to interpersonal stressors and associations with physical health. This study examined the effect of rejection sensitivity on relationship satisfaction, depression, physical health, and physiological reactivity during a conflict task with a romantic partner. Physiological and self-report data were collected from 74 college-aged dating couples, where dyads were categorized as high or low in RS, based on composite scores on the Rejection Sensitivity Questionnaire -Short version (RSQ-SF; Downey & Feldman, 1996). Consistent with hypotheses, the study replicated previous findings linking high rejection sensitivity to lower relationship satisfaction ($p < .001$) and higher depression ($p < .001$), showing that in comparison to the low rejection sensitivity group, those in the high rejection sensitivity group were more dissatisfied with their relationships, and more likely to report depressive symptoms. Contrary to hypotheses, there was no relationship between rejection sensitivity and physical health or physiological stress reactivity as indexed by heart rate, blood pressure, or skin conductance. However, self-reported measures show that high rejection sensitivity dyads were significantly more likely to have rated themselves as feeling more stressed (more "anxious" and "worried", less "calm") during the conflict task than low rejection sensitivity dyads ($p < .05$), despite the fact that they had no appreciable differences from the low rejection sensitivity group in physiological reactivity, at least as indicated by the specific measures used in this investigation. The dyadic nature of this study has important implications for findings on depression and the impact of RS on relationship satisfaction. Discordance between self-reported and cardiovascular measures of stress are discussed, with methodological implications.

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EFFECTS OF SOCIAL CONSTRAINTS ON DEPRESSIVE SYMPTOMS & ILLNESS INTRUSIVENESS IN CKD: THE ROLE OF AVOIDANCE & INTRUSIVE THOUGHTS

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Background: As patients with chronic kidney disease (CKD) approach end-stage renal disease (ESRD), they begin to face significant illness-related stressors including significant lifestyle disruption and reduced life expectancy. During this time, according to social cognitive processing theory, the disclosure of one's thoughts and emotions in a supportive context is critical, but social constraints (e.g. perceiving others as minimizing or uncomfortable with one's concerns), may limit this critical process from occurring. A primary aim of the current study was to examine the relationships between social constraints and depressive symptoms and illness intrusiveness in lifestyle functioning among patients with CKD who are approaching ESRD. Another aim was to examine whether disease-related avoidance and intrusive thoughts mediate these relationships.

Method: Patients approaching ESRD ($n=64$, 50% female, mean age=63.6, mean GFR=16.8) completed self-report measures of social constraints, disease-related avoidance and intrusive thoughts, depressive symptoms, and illness intrusiveness in lifestyle functioning.

Results: Initial correlations conducted found social constraints were associated with more avoidance ($r=.62$, $p < .001$) and intrusive thoughts ($r=.60$, $p < .001$) as well as greater depressive symptoms ($r=.48$, $p < .001$) and illness intrusiveness ($r=.53$, $p < .001$). Next, four mediation analyses (with bootstrapping) were conducted to examine the mediating roles of avoidance and intrusive thoughts in the relationships between social constraints and depressive symptoms and illness intrusiveness. Disease-related avoidance mediated the association between social constraints and depressive symptoms, $B=0.11$, CI [.02, .22] and illness intrusiveness, $B=0.30$, CI [.09, .57]. Disease-related intrusive thoughts similarly mediated the association between social constraints and depressive symptoms, $B=0.18$, CI [.09, .29] and illness intrusiveness, $B=0.47$, CI [.28, .50].

Conclusions: Disease-related avoidance and intrusive thoughts may play important roles in the relationships between social constraints and depressive symptoms and social constraints and illness intrusiveness manifest in patients approaching ESRD. These findings suggest that disease-related avoidance and intrusive thinking could be important targets for clinical intervention to improve outcomes in this population particularly when constraints on the open expression of disease-related thoughts and emotions exist.

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PERINATAL MATERNAL STRESS AND SUSCEPTIBILITY TO INFECTIONS IN LATER CHILDHOOD: AN EARLY LIFE PROGRAMMING PERSPECTIVE

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Background: There is evidence of transmission of stress-related dysregulation from the parental organism to the offspring during early developmental stages. Research on maternal stress as a factor in immune functioning has been limited to stress exposure in utero and its effects on infants. The purpose of this study was to investigate whether perinatal maternal stress is linked to the risk of infectious diseases in children aged 7–11 years. We hypothesized that stress exposure during pregnancy and the first 6 months after delivery independently predicts common infectious diseases in mid-childhood.

Methods: Data came from the European Longitudinal Study of Pregnancy and Childhood - Czech Republic, a prospective birth cohort (N=4,811). Maternal stress, operationalized as the number of stressful life events, was examined during pregnancy and the first 6 months postpartum. Children's infectious diseases between the ages of 7–11 years, assessed by maternal report, included bronchitis/lung infection, laryngitis, strep throat, influenza/flu-like infection, cold sores, ear infection, and eye infection. General linear models were estimated to predict the number of childhood infections as a function of prenatal stress, postnatal stress, maternal health during pregnancy, delivery characteristics, and sociodemographic background. Additionally, each type of infection was modeled separately using the same predictors.

Results: Women reported on the average 3.01 prenatal and 2.24 postnatal life events and 2.24 children's infectious diseases. Consistent with our hypothesis, mothers who reported more stressful life events also reported that their children had higher number of infectious diseases between the ages of 7–11 years. In a fully controlled model, the effect was larger for postnatal ($\beta=.10$, $p<0.001$) vs. prenatal life events ($\beta=.02$, $p<0.020$). In models predicting each infectious disease as a function of prenatal life events and covariates, prenatal events were linked to an increased odds of bronchitis/lung infection (OR=1.02, $p=.014$), strep throat (OR=1.03, $p=.010$), cold sores (OR=1.02, $p=.004$), and eye infection (OR=1.02, $p=.022$). After including postnatal life events, prenatal life events remained a significant predictor for cold sores only (OR=1.02, $p=.022$), while postnatal life events independently predicted bronchitis/lung infection (OR=1.04, $p=.033$), strep throat (OR=1.06, $p=.002$), cold sores (OR=1.03, $p=.039$), and flu-like infections (OR=1.06, $p=.021$).

Conclusions: Perinatal maternal stress is linked to an increased risk of infectious diseases in school-age children. Both prenatal and postnatal stress predict infectious diseases in mid-childhood, but the postnatal life events have stronger and more consistent effects. Interventions to address stress in postpartum women may have long-term benefits for child health.

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PERSONALITY DIMENSIONS PREDICT PERCEIVED STRESS LEVELS, MINDFULNESS SCORES, AND COPING STYLES IN COLLEGE STUDENTS

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Background: Over half of college students report high stress levels and ineffective coping behaviors for stressors they encounter in pursuit of their academic career. Personality can modulate the ways individuals appraise and cope with stress. This study aimed to examine how Openness (O), Conscientiousness (C), Extroversion (E), Agreeableness (A) and Neuroticism (N) are associated with perceived stress, mindfulness, and coping styles in college students.

Methods: 384 participants (18–25 years), completed the Big Factor Inventory, Perceived Stress Scale (PSS), Brief COPE, The Mindful Attention Awareness Scale, and demographic questions. Bivariate correlations were used to identify variables that were significantly associated with O, C, E, A, and N.

Results: Of the 384 participants, most students were White (80.7%), Female (82%), and Juniors (30.2%) or Seniors (37.5%) in college. There was a significant inverse relationship between Conscientiousness, Extroversion, Agreeableness, and stress ($p<.01$), and a significant positive correlation ($p<.01$) between Neuroticism scores and stress. Those with high Conscientiousness, Extroversion, or Agreeableness scores were more likely to have high mindfulness scores ($p<.01$), while those who were high in Neuroticism were more likely to have low mindfulness scores ($p<.01$). Students who were high in Conscientiousness, Extroversion, and Agreeableness were more likely to practice adaptive coping techniques, such as active coping, use of emotional support, and positive reinforcement than those with high Neuroticism scores ($p<.01$). In contrast, students with high Neuroticism scores were more likely to report use of self-distraction, substance abuse, behavioral disengagement, venting, and self-blame to cope with stressful situations.

Discussion: Consistent with existing literature on adults, the results of this study suggest personality traits predict perceived stress levels, mindfulness, and coping styles in college students. If universities provide students with resources that allow them to become aware of how their personality can affect stress appraisal and coping, then they may be able to improve their perceptions and coping mechanisms for stress. Additionally, these findings may be useful to mental health professionals in helping university students cope with stressful situations.

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PERSON-FOCUSED GRATITUDE BUFFERS AGAINST STRESS

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Numerous studies have shown the positive effects of experiencing gratitude. For example, gratitude appears to buffer against the effects of negative life events, and listing the things one is grateful for has been shown to reduce perceptions of daily stress. On an interpersonal level, expressing gratitude towards one's partner has been shown to increase perception of the relationship's strength, and writing letters of gratitude has been shown to increase individuals' happiness and life satisfaction, as well as reducing depressive symptoms. Given the promise of person-directed gratitude as an intervention, the present study examined the effect of prompting gratitude towards specific people on perceived stress. We hypothesized that inducing gratitude towards specific people would lower one's perceived stress. A sample of undergraduate students ($N = 92$) participated in a ten-day diary study in which (among other measures) they reported their level of gratitude and completed The Daily Inventory of Stressful Events (in which they indicated which of a series of stressors they experienced that day). Half of the participants were first asked, each day, to name someone for whom they were thankful. Multilevel model analyses showed that participants in the person-focused gratitude condition had higher daily gratitude than participants in the control condition ($b = 0.71$, 95% CI = [0.01, 1.40], $SE = 0.35$, $t(72.81) = 1.99$, $p = .05$), and these increases predicted fewer daily stressors ($b = -0.01$, 95% CI = [-0.02, -0.01], $SE = 0.004$, $t(625.02) = -3.35$, $p < .001$), and a reduction of Perceived Stress Scale (PSS) after the 10-day diary period (i.e., the reduced stress between pre-study and post-study was greater; $b = 0.82$, 95% CI = [0.38, 1.27], $SE = 0.23$, $t(72.36) = 3.64$, $p < .001$). These initial findings suggest that practicing daily gratitude, and doing so in a way targeted toward specific people, could offer a practical method to reduce the impact of stressful experiences.

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STRESSFUL LIFE EVENTS PREDICT INCREASED CONSUMPTION OF SWEETS IN ADOLESCENCE: LONGITUDINAL ANALYSIS OF A PROSPECTIVE COHORT

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Purpose: Stressful life events (SLE) have been associated with maladaptive health behaviors, but their role in adolescent diet is not well understood. We examine longitudinally the association between SLE and consumption of sweets, snacks, and sugar-sweetened beverages among a cohort of Czech adolescents.

Methods: The study utilizes nested fixed effects models to examine dietary change between 11 and 15 years of age. Data were obtained from the European Longitudinal Study of Pregnancy and Childhood, the Czech Republic. Diet is measured as the weekly frequency of consumption of salty snacks, sweets, and sugar-sweetened beverages. SLE are measured with a scale that accounts both for the number of stressful events and their perceived impact. Additionally, we examine whether psychological, familial, and economic resources account for the relationship between SLE and diet.

Results: Cross-sectionally, we found a significant positive relationship between SLE and the diet measures. However, in the longitudinal fixed effects models only the consumption of sweets increased significantly with SLE. Psychological, familial, and economic factors were not associated with diet in the longitudinal models.

Conclusions: Adolescence is a vulnerable period of increased risk for poor dietary choices. SLE among Czech adolescents lead to an increased consumption of sweets. These findings highlight the need for interventions that help adolescents cope with stress without resorting to unhealthy diet.

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GENDER COMPOSITION OF DRUG INJECTING INITIATOR-INITIATE RELATIONSHIPS IN THREE NORTH AMERICAN CITIES: A MIXED METHODS STUDY

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Background: Female gender is associated with heightened injection drug use (IDU)-related vulnerability, but little is known regarding the role of gender in shaping the relationship between IDU initiators and those they initiate into injection drug use. We therefore sought to explore the gender composition of injection initiator-initiate relationships and potential differences in those relationships across San Diego, Tijuana, and Vancouver.

Methods: Data from *Preventing Injecting by Modifying Existing Responses* (PRIMER), pooled and analyzed three prospective community-recruited cohorts of people who inject drugs (PWID): STAHR II, San Diego, USA; El Cuete IV, Tijuana, Mexico; and VDUS, Vancouver, Canada. Composite variables were created by combining participants' gender and the gender(s) of the person(s) to whom they reported providing injection initiation assistance in the past six months. Frequencies and chi-square analyses were created for the dependent variables of interest: initiator-initiate relationship type (i.e. male initiator-male initiate, male initiator-female initiate, male initiator-mixed gender initiates, female initiator-male initiate, female initiator-female initiate, and female initiator-mixed gender initiates) and the gender concordance (i.e. same gender relationship types) of those pairs. We also used qualitative data from PWID in San Diego and Tijuana to explore gendered pathways to injection initiation and used a thematic approach, guided by the Theory of Gender and Power, for coding and analysis.

Results: Among the 2,622 PWID included in the study, 112 (4.3%) reported providing injection initiation assistance in the past six months. We identified higher than expected gender concordance among participants and their initiates in Tijuana (83%) compared with participants and their initiates in San Diego (41%) Vancouver (35%, $\chi^2[2] = 10.3$, $p < 0.01$). Qualitative narratives ($n = 42$) revealed the importance of the gendered division of labor and power, as well as gendered social norms, in influencing injection initiation events. Women expressed both vulnerability and agency within their injection initiation events, particularly involving injection initiation by and of intimate partners.

Conclusions: This research highlights the gendered context of injection initiation events and contextual variation across settings. This can inform both site- and gender-specific interventions to reduce the risk of injection initiation and related harms.

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A MULTI-SITE CASE STUDY EVALUATION OF MANDATED SBIRT POLICY IN MASSACHUSETTS PUBLIC SCHOOLS

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Background. A 2015 Massachusetts bill requires that all schools offer Screening Brief Intervention and Referral to Treatment (SBIRT) to middle and high school students to advance universal and indicated prevention of alcohol and other drug use and to help address access barriers for youth needing/seeking healthcare. Understanding acceptability of school SBIRT and markers of success is vital for state-scaled implementation and outcomes evaluation.

Methods. A mixed-methods evaluation using data collected and analyzed from staff focus groups (FGs) and student surveys to ascertain factors associated with acceptability in 2 districts with 5 schools & 1,326 youth. FGs (n=4) with n=46 nurses and guidance counselors, were facilitated by research staff, audio recorded and analyzed thematically. Youth in grades 7, 9, & 10 who participated in SBIRT in 2016–17 were anonymously surveyed (under passive parental consent); data were analyzed using descriptive statistics. FG and survey data were triangulated to understand staff and student perspectives together.

Results. In FGs, strong leadership, logistical support, interprofessional focus on education and relationship-building with students were associated with successful implementation. Challenges included perceptions of low parental support and student disclosure, concern for privacy, and staff burden. Among 805 student survey participants (participation 78.3%): 9.6% and 36.8% of middle and high schoolers reported past year alcohol use, with 42% and 59% of users reporting a past year binge, respectively ($p < 0.0001$). Overall, 67% agreed/strongly agreed that staff should screen students; a minority agreed/strongly agreed that “screening is an invasion of privacy” (37.9%) and “a waste of time” (30.8%). Receptiveness towards screening was higher among those who did not report past year use ($p < 0.0001$). Among students who reported being screened (n=432), 97.2% reported answering all/some questions honestly, and most agreed/strongly agreed that they felt comfortable (71.3%), their privacy was respected (84.5%), the information was useful (73.6%). Two-thirds (62.3%) agreed/strongly agreed they would return to the staff member who screened them for questions about AODs, with more agreement among past year users ($p < .034$).

Conclusion. For staff, program acceptability was high despite challenges, with success reframed as relationship building not youth disclosure. Students reported high acceptability and candid disclosure; their stated openness to returning to staff to discuss AOD use was a key indicator of success and bodes well for case finding and clinical response to at-risk youth. Results are promising for a strategy that extends SBIRT to schools in advance of diffusion and evaluation at state scale.

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ADDRESSING VIRGINIA'S SUBSTANCE USE EPIDEMIC: EVALUATING A NEW STATEWIDE TREATMENT AND REIMBURSEMENT PROGRAM

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Background: Communities across the Commonwealth of Virginia are suffering from an unprecedented substance use disorder (SUD) epidemic. Over 1,420 people died of drug overdose in Virginia in 2016, 38% more than 2015. Nationally, Medicaid members are more than three times as likely as people with private insurance to have misused prescription opioids or heroin, or suffered an overdose. Recognizing the need to mount a comprehensive response to the addiction crisis and repair Virginia's historically fragmented behavioral health system, the Virginia Department of Medical Assistance Services (DMAS), which is responsible for the state's Medicaid program, implemented the Addiction and Recovery Treatment Services (ARTS) in April, 2017. The ARTS program aims to increase access to treatment for Medicaid members with opioid or other substance use disorders by expanding benefits to include the following: inpatient detox, residential treatment, partial hospitalization, intensive outpatient programs, opioid treatment, case management, peer recovery supports, and crisis intervention.

Methods: Researchers used Medicaid claims data from April through June 2017 and the same time period in 2016. They calculated the number of unique providers, including medical and behavioral health providers providing ASAM level 1 services. They also calculated receipt of treatment using diagnosis and inpatient, outpatient, residential treatment, or prescription drug use for SUD that was paid for by Medicaid. Treatment delivery was also mapped based on health district regions.

Results: In the first 3 months on the program, the number of providers treating SUD increased from 667 prior to ARTS to 1,603. During the same time period, treatment rates among Medicaid members with SUD increased to 39% compared to 26% during a similar time period in 2016. The number of Medicaid members receiving prescriptions for opioid use disorders increased by 29%. Regional increases in SUD treatment delivery ranged from 17–77%.

Conclusions: During the first three months, ARTS has substantially increased access to SUD treatment for Medicaid members by reducing the “treatment gap” and expanding the number of health care practitioners treating Medicaid members for SUD.

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CHILDHOOD ABUSE, PTSD, AND LIFETIME SUBSTANCE USE DISORDER IN LATINO AMERICANS: WHOLE-GROUP, US-BORN, AND FOREIGN-BORN MODELS

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Introduction: Childhood abuse (CA), posttraumatic stress disorder (PTSD) and lifetime substance use disorder (LT-SUD) are major behavioral health concerns, particularly among underrepresented populations; yet there is limited knowledge regarding their associations for Latino Americans. This study investigated the relationship of childhood physical abuse (CPA) and childhood sexual abuse (CSA) to PTSD and LA-SUD among Latino Americans ($N=2,554$) using the National Latino and Asian American Study, including analyses of nativity differences (US-born and foreign-born Latinos).

Methods: We used all Latino American ($N=2,554$) with a mean age at 38.02 years ($SD=15.03$; range, 18–97). The weighted Latino sample was roughly proportional in terms of gender (48.5% female) and nativity (43% US-born Latinos). Three path models for the whole-group, US-born, and foreign-born Latinos were conducted to examine the direct and indirect effects of CPA and CSA on LT-SUD, mediated by PTSD.

Results: Results showed higher prevalence rates of CPA (35.3% vs. 24.4%), CSA (17.4% vs. 9.3%), PTSD (6.5% vs. 4.6%), and LT-SUD (17.1% vs. 5.3%) for US-born Latinos than for foreign-born Latinos. The findings of the three final models (whole-group, US-born, and foreign-born models) fit the data adequately, with CFI (987-.980), TLI (.936-.984), RMSEA (.015-.063), and SRMR (.006-.015). Path models indicated a direct link between CPA (but not CSA) and LT-SUD and an indirect link between CA and LT-SUD through PTSD.

Conclusion: The current study is important because it expands the knowledge base regarding the behavioral health impact of inadequate or harmful child-rearing practices in Latino families. Findings underscore the need for prospective studies that evaluates culturally-relevant behavioral health screening and assessment practices with Latinos with histories of childhood trauma.

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CONTEMPORARY PATTERNS OF MARIJUANA USE AND ATTITUDES AMONG HIGH SCHOOL SENIORS: 2010–2014

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Introduction. Marijuana use behavior among adolescents is of great concern as early use has been linked with numerous negative consequences including lower academic achievement, other substance use behavior, and substance use disorders later in adulthood. Although trends in behaviors and attitudes are well-established in large, national samples, information derived from these data tend to be reported as population-averages for single constructs, such as the overall rate of past 30 day marijuana use or attitudes about occasionally using marijuana on average. Examining these trends individually limits our ability to identify subgroups of individuals characterized by varying levels of use behaviors and attitudes. Given recent changes in state-level marijuana legislation, the goal of this study was to examine changes in contemporary patterns of marijuana use and attitudes over time using person-centered methods.

Methods. Data are from high school seniors in the 2010–2014 waves of Monitoring the Future, a nationally representative, cross-sectional survey in the United States. Latent class analysis was used to identify underlying patterns of marijuana use behaviors and attitudes across all years. Differences in latent class structure and membership were examined across years, and with respect to gender and race/ethnicity.

Results. Five latent classes were identified: Intolerant Non-users (50.4% of the sample), Tolerant Non-Users (10.7%), Disapproving Users (7.8%), Experimenters (5.7%), and Marijuana Enthusiasts (25.4%). After survey year was added as a grouping variable, prevalence rates for each class remained relatively stable from 2010 to 2014. Membership in the Marijuana Enthusiasts class was consistently more likely for males across all years; membership in the Tolerant Non-Users class relative to the Intolerant Non-Users class was also more likely for males, but only until 2013. Hispanic and Black individuals tended to be more likely than Whites to be Disapproving Users relative to Intolerant Non-Users.

Conclusions. Despite the changes in marijuana legalization that began to occur in 2012, contemporary patterns of marijuana use and attitudes have remained relatively stable over time. The Marijuana Enthusiasts class, characterized by recent use and approval of use at any frequency, suggests that a substantial subgroup of adolescents would benefit from prevention and intervention efforts targeting marijuana use behaviors and perceptions.

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COVARIATES OF HAZARDOUS ALCOHOL USE AMONG SEXUAL AND GENDER MINORITIES IN TEXAS

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Introduction. While U.S. data suggests sexual and gender minority (SGM) persons tend to consume alcohol more frequently than their heterosexual cisgender peers, data are limited on the prevalence of hazardous drinking and associated covariates of SGM persons in Texas. The purpose of these analyses was to estimate differences in the prevalence of hazardous drinking by sexual and gender identity and to identify associated covariates for intervention development.

Methods. A total of 1298 participants completed an online health needs assessment survey between March 2016 and January 2017. Survey items included alcohol consumption (AUDIT-C), illicit substance use, life experiences, and health diagnoses. Variables found significantly associated with hazardous drinking at the bivariate-level (p

Results. Participants were 38.1% male, 46.3% female, and 15.5% transgender-identified. Over a third (39.1%) of participants had a hazardous drinking score. Compared to non-hazardous drinkers, persons engaging in hazardous drinking were younger ($=20.7$ [SD=0.4] vs. $=26.5$ [SD=0.5]) and more likely to be Hispanic (41.4% vs. 26.3%). They were more likely to report using illicit drugs in past 12 months, including opioids (15.3% vs. 6.7%), stimulants (26.3% vs. 12.7%), and marijuana (37.6% vs. 21.2%); if injecting, there were more likely to share syringes (12.3% vs. 5.8%). Hazardous drinkers were also more likely to report discrimination based on sexuality (12.8% vs. 8.9%), high levels of stress (67.9% vs. 61.8%), incarceration (14.1% vs. 7.3%), and intimate partner violence (39.6% vs. 35.0%). When entered into a multivariate logistic regression model, covariates most associated with hazardous drinking were younger age (OR=0.97 [0.95–0.98]), being Hispanic (OR=1.6 [1.2–2.2]), using opioids (OR=1.7 [1.1–2.1]), stimulants (OR=1.4 [1.0–2.0]), and/or marijuana (OR=1.5 [1.1–2.1]), and incarceration (2.1 [1.4–3.3]).

Conclusions. Hazardous drinking is prevalent among SGM Texans, especially Hispanics. Co-occurring opioid and stimulant use, the sharing of syringes if injecting, and intimate partner violence are concerning. Because incarceration was more common among hazardous drinkers, opportunities exist to strengthen re-entry programs ability to screen and link persons with a history of alcohol use to agencies able to provide treatment, including medication-assisted therapies.

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MAPPING ACCESS TO CARE IN HAWAII: EXPLORING THE ROLE OF GEOGRAPHIC ISOLATION ON YOUTH SUBSTANCE USE TREATMENT DISPARITIES

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The 2014 U.S. Census Bureau indicates rural residents experience higher rates of poverty than their urban counterparts across age groups and race/ethnicity categories. Rural community members also experience a greater impact from mental health concerns due to accessibility, availability, and acceptability of mental health care challenges. Central to the issue of accessibility is the availability of specialty services such as substance use prevention and treatment. The 2004 National Survey of Substance Abuse Treatment Services, found that only 8.9% of treatment facilities were located in rural counties. Consistent with patterns observed nationwide, rural counties in Hawaii experience more barriers accessing services, as the majority of health resources are located in the state's urban center. Given the unique features of Hawaii, it is important to explore the role of geographic isolation (i.e., physical separation by water from the state's urban core) on prevention and treatment access. Geographic isolation is defined by county, with all non-Oahu counties identified as geographically isolated. This study aims to identify and use existing epidemiological data and utilize geocoding (i.e., converting addresses into geographic coordinates) to visually display substance use rates in relation to prevention and treatment facilities on a map. This mapping analyzes the accessibility (e.g., distance, transportation options, etc.) and availability (e.g., number of facilities, number of health professionals per capita, etc.) of substance use prevention and treatment services in Hawaii. In 2015, youth ages 12–17 residing in non-Oahu counties reported higher rates of illicit drug (35.8%), marijuana (22%), alcohol (37.5%), and tobacco use (27.2%), and nonmedical use of prescription pain relievers (14.4%) than Oahu youth. Thus, youth in geographically isolated areas do trend towards higher substance use rates compared to urban counties in Hawaii and indicates a need for analyzing treatment accessibility in rural areas. Data on adult populations is not available at the county-level. The findings from this study can be used to inform state- and county-level planning related to drug prevention and treatment initiatives.

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PREDICTING DRINKING PROBLEMS IN YOUNG ADULTS: THE ROLE OF DEPRESSION AND EXECUTIVE FUNCTION IMPAIRMENT

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Introduction. Young adulthood is often characterized by rapid executive function (working memory, planning) and social development. However, young adults are at increased risk for developing depression and increased use of illicit drugs and alcohol. Why social drinking evolves into problem drinking for some young adults is unclear. The research shows that poor executive function (EF) skills are a contributing factor to poor decision-making, and more specifically associated with increased alcohol intake. Furthermore depressive symptoms have been associated with alcohol use. This study tested a model to determine whether the relation between depression and problematic alcohol use would be mediated by EF deficits.

Method. The participants were 344 undergraduate students at a medium-sized university, [$M(\text{age}) = 19.09$, $N(\text{males}) = 202$]. The majority of participants were White (46.2%). Participants completed the following self-report measures: a demographics survey, the Center for Epidemiological Studies Depression Scale-Revised, the Behavior Rating Inventory of Executive Function Adult version, and a brief self-report of negative drinking behaviors established from previous measures of alcohol use outcomes.

Results. Females reported more depressive symptoms than males ($M=14.92$, $SD=12.97$; $M=12.02$, $SD=11.09$; $t(342)=-2.22$, $p<.05$) and males reported more drinking problems than females ($M=6.14$, $SD=5.06$; $M=4.92$, $SD=4.73$; $t(338)=2.24$, $p<.05$). Depressive symptoms were significantly positively correlated with drinking problems ($r(342)=.13$, $p<.05$) and with EF impairment ($r(342)=.49$, $p<.001$). Additionally, drinking problems was associated with EF impairment ($r(342)=.21$, $p<.001$). The regression of depression symptoms on drinking problems, ignoring the mediator, was significant, $b=.05$, $t(342)=2.41$, $p<.05$. The regression of symptoms of depression on the mediator, EF, was also significant, $b=.04$, $p<.001$. The mediator (EF), controlling for symptoms of depression, was significant, $b=.96$, $t(342)=3.20$, $p<.01$. Controlling for the mediator (EF), symptoms of depression was not a significant predictor of drinking problems, $b=.02$, $t(342)=.61$, $p=.54$. A Sobel test found full mediation in the model ($z=3.04$, $p=.002$). It was found that EF fully mediated the relationship between symptoms of depression and drinking problems.

Discussion. These findings provide support for the assertion that symptoms of depression increase the likelihood of engaging in problematic drinking behavior (drinking and driving, engaging in risky sexual behavior while drinking), which is further influenced by EF impairment. Therefore, individuals with depression and EF impairment are at much greater risk for problematic drinking behavior. Future research should examine how gender plays a role in this model and how problematic drinking behavior may further influence symptoms of depression.

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STRATEGIES TO PREVENT (STOP) SUBSTANCE ABUSE: A WEBSITE FOR ADOLESCENTS IN HAWAII

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BACKGROUND: Substance abuse is a global problem, and unfortunately, the state of Hawaii is home to a substantial number of substance abusers. Substance abuse is related to negative mental health and physical health outcomes. Adolescent years involve the seeking of social acceptance and “experimenting” which increases the likeliness for adolescents to experiment with drug use. In addition to health risks, adolescent drug use poses risk for addiction than may lead to drug abuse in adult years. Therefore, the first goal of this study was to investigate drugs commonly found in Hawaii and what physical, social, and health effects are related. The second goal was to address the problem of substance abuse by creating prevention methods targeted to Hawaii adolescents. Specifically, the purpose of this study was to explore the effect of substance abuse prevention education with the creation of a website targeted to adolescents in Hawaii.

METHODS: A website (<http://substanceabusehawaii.weebly.com>) was developed including drug overviews, health effects, how to stay away, external resources for prevention and treatment, and an evaluation survey. A baseline (T1) survey based on content found on website (12 items) was given to 3 grade 11 classes. Following the interaction time with the website (~15 minutes), the students completed a follow-up (T2) assessment. Additionally, a 2-inch foam ball (a choice of basketball, baseball, football, or soccer ball) advocating for a healthier method of relieving stress (a substitute activity of substance use) was provided to each participant.

RESULTS: At T1, 63/72 [participation rate=87.5%] and at T2, 62 [retention rate=98.4%] students participated (92% female; 16–17 years old; 87.2% Filipino; 6.4% other Pacific Islander; 6.4% Asian; 3.2% Hawaiian; 3.2% Caucasian; and 0.6% Hispanic/Latino [multiple responses allowed]). The number correct increased from 48.0% (SD=14.5) at T1 to 82.0% (SD=15.3) at T2 ($t(59)=13.5$, $p<.001$). There were improvements in 11/12 questions ($p<.05$). Topics that improved addressed mental disorder drug abuse, workplace meth-use in Hawaii, Americans in need of drug/alcohol treatment, stimulant drugs, side effects of drugs, drug related domestic/child abuse, short-term drug effects, Hawaii and national meth-use, chemicals in drugs, how to stay away, and ways of treatment.

DISCUSSION: Findings showed adolescents’ improved understanding on the topic of substance abuse prevention. This is promising considering the brief, inexpensive intervention which is feasibly implemented within a high school curriculum.

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THE DEVELOPMENT OF A COMPUTERISED SCHOOL-BASED PREVENTION PROGRAM TO EMPOWER INDIGENOUS YOUTH: BUILDING ON STRENGTHS

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Objectives: This project aims to develop a culturally appropriate school-based alcohol and other drugs (AOD) prevention program and an online AOD prevention portal for Indigenous youth. This presentation will discuss the innovative approaches used in the development of these resources.

Materials and methods: Two literature reviews were undertaken to 1) identify effective elements of previous AOD prevention programs with Indigenous Populations and 2) investigate risk and protective factors of AOD use for Indigenous Australians. Researchers partnered with four schools at which focus groups and interviews were conducted with teachers and parents, using an appreciative inquiry approach. Students participated in a Photovoice project where they took and shared photographs of positive social interactions in their community, and their role models. Group sharing of the photographs included a creative story telling session. Students completed a brief empowerment questionnaire before and after the consultation process.

Results: Culturally adapted mainstreet programs were most effective in prevention AOD for Indigenous youth. Effective elements of AOD programs included cultural knowledge integration, AOD skills and diversionary activities. Individual, community and societal risk and protective factors were identified for AOD use for Indigenous Australians.

Consultations indicated a need for culturally appropriate AOD prevention materials that are empowering and suitable for delivery in a mixed classroom setting. Interactive programs using technology and include storylines in line with students’ experiences are likely to be most effective. Students provided pictures of their role models (e.g. parents, sports players, cousins) and identified positive interactions in their community, from which they developed story lines to be integrated into the school-based program.

The information gathered in the literature reviews and the consultations (including photographs produced by the participating students), informed initial storylines and designs for a school-based AOD prevention program that is culturally appropriate for Indigenous students.

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THE IMPACT OF NONMEDICAL PRESCRIPTION STIMULANT PROTOTYPES AND ACADEMIC CONSEQUENCES ON RISK COGNITIONS

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Nonmedical prescription stimulant (NPS) use, or taking a stimulant (e.g., Adderall) without a prescription, is a growing health issue among college students (Weyandt et al., 2016). Despite numerous health risks (e.g., irregular heart-beat and stroke; NIDA, 2017), using NPS to study is common on campuses with rates up to 38% (Arria et al., 2013). The rising prevalence signals a need for interventions to prevent and reduce use. The Prototype-Willingness Model of health behavior suggests that altering prototypes, or perceptions of the typical person who does (or does not) engage in the health behavior, can affect willingness to engage in that behavior (Gibbons et al., 2015). However, studies have not examined this with regards to NPS use and linked academic consequences. The current study manipulated prototypes of a NPS user and non-user, and stories of academic success or failure, to examine how this information impacts perceptions of NPS use and risk cognitions.

Using a 2x2 experimental design, 174 undergraduates without an ADHD diagnosis or stimulant prescription were randomly assigned to read about: 1) a student of the same gender who either used or abstained from NPS (prototype manipulation), and 2) a resulting academic outcome (i.e., performed well or poorly on exams). Afterwards, participants reported their perceptions of the student, beliefs about NPS, and willingness to use.

ANCOVAs controlled for gender, ever use, year in school, and GPA. Results indicated main effects of prototype and academic outcome on student perceptions, such that abstainers (vs. users) and those who performed well (vs. poorly) were rated more favorably, $p \leq .001$. Pairwise comparisons revealed that abstainers (vs. users) were viewed more favorably regardless of their academic outcome, $p \leq .001$. A main effect of prototype on NPS beliefs also showed that participants in the user (vs. abstainer) group rated NPS as more effective, $p = .025$. A significant prototype X outcome interaction on NPS beliefs revealed that participants in the user-performed well group rated NPS use as the most effective, $p \leq .01$. Finally, there was a significant interaction on willingness ($p = .019$). Participants who read about a user had greater willingness to use than those who read about an abstainer when the target was said to have performed well (vs. poorly) on exams. Findings suggest that interventions should highlight academic drawbacks of use and incorporate abstainer prototypes in prevention messaging.

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THE OUTCOMES OF A COMMUNITY-BASED PARTICIPATORY RESEARCH PROJECT WITH ABORIGINAL AUSTRALIANS REDUCING ALCOHOL-RELATED HARMS

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Background: Solutions designed and led by Aboriginal Australians are most effective and sustainable in improving the health of Aboriginal Australians. The challenge is to bring together the leadership, skills and knowledge of Aboriginal communities with the highly specialised, real-world evaluation skills of senior researchers.

Objectives: This presentation will showcase how a community-based project aiming to reduce alcohol-related harms among Aboriginal people combined Aboriginal expertise with evaluation expertise of academics at UNSW.

Method: Using a community-based participatory research approach, researchers collaborated closely with three Aboriginal communities to identify target population and times using routinely collected data to inform the development of a community-based program. The program was designed to allow it to be standardised across communities but also tailored to the individual preferences and resources in each community. Outcomes measured were community perceptions of alcohol harms measured using a community survey and the impact on routinely collected alcohol-related crimes and ED presentations.

Results: Findings indicated a statistically significant reduction in the number of Aboriginal persons of Interest and victims of alcohol-related crimes in one community and statistically significant reductions in the number of Aboriginal people presenting to local EDs with alcohol-related injuries in two communities. There were statistically significant improvements in community members' perceptions that their community was able to make positive changes and a safe place to be during the day and at night. Finally, there were statistically significant reductions in community members' perceived frequency of alcohol-related verbal abuse and frequency of alcohol-related injuries.

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BARRIERS AND FACILITATORS TO TOBACCO COUNSELING IN WIC CLINICS

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Most pregnant smokers do not receive smoking cessation assistance and most women who quit during their pregnancy return to smoking within the first year postpartum. Smoking rates are higher among pregnant women enrolled in the Special Supplemental Nutrition Program for *Women, Infants, and Children (WIC)* (12.6%) compared to pregnant women overall (8.4%). WIC clinics routinely identify tobacco users and prior studies have shown that tobacco interventions in WIC clinics are feasible and potentially effective. The aim of this study was to describe barriers and facilitators to implementing evidence-based tobacco treatment in WIC clinics.

Methods: We conducted site visits with 12 urban and rural WIC clinics in Kansas. Semi-structured interviews were completed with 23 WIC coordinators, nurses, and dietitians. Interviews were audio-recorded, professionally transcribed, and imported into NVivo 11. Thematic analyses of the transcripts were guided by the COM-B (Capability, Opportunity, and Motivation – Behavior) system that summarizes the necessary conditions for behavior change and maintenance.

Results: In the *behavior* domain, coordinators at all WIC clinics reported that staff referred smokers to the quitline and almost half of the clinics had a smoking cessation program within the county health department. In the *capability* domain, many staff reported receiving training in brief tobacco treatment (e.g., ask, advise, refer) and that they had resources to refer smokers. However, barriers included low self-efficacy for providing counseling and a need for additional tobacco counseling training. In the *opportunity* domain, perceptions of opportunities to discuss tobacco use were mixed, some participants reported ample time to include tobacco counseling whereas others reported that time pressure was a barrier due to conflicting priorities. Uniformly, tobacco-related follow-up was challenging due to limited visits and lack of feedback from referral programs. In the *motivation* domain, staff reported WIC and clinic leadership support for tobacco treatment and many identified smoking cessation and reducing second hand smoke exposure as important priorities.

Conclusions: WIC clinics are currently implementing models of brief tobacco treatment and referral. Additional efforts are needed to increase WIC staff's confidence in providing tobacco counseling and to create interconnected systems for tobacco treatment that include WIC clinics and other community-level resources.

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DISTRIBUTION OF TOBACCO RETAIL OUTLETS AND SMOKING CESSATION AMONG AFRICAN AMERICAN AND WHITE SMOKERS

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The presence of tobacco retail outlets increases exposure to tobacco advertising and provides cues to purchase tobacco. Previous studies have found greater tobacco outlet density in disadvantaged areas and in communities with higher proportions of African Americans. The aim of this study was to determine whether tobacco outlet density and proximity were negatively associated with successful quitting among lower income African American and White smokers.

METHODS: Participants were 221 African American and 219 White smokers enrolled in a smoking cessation cohort intervention who received both counseling and varenicline. Eligibility criteria included income < 400% federal poverty level (FPL). Tobacco retail outlet addresses were obtained from state agencies in Kansas and Missouri. Addresses were geocoded using ArcGIS. Residential proximity to the nearest outlet and outlet density (number of outlets within 500m [0.31 miles] and 1km [0.62 miles]) were calculated. Analyses included mixed-effects logistic regression models, adjusting for study stratification factors (gender, age) and baseline cigarettes per day because they are known predictors of cessation.

RESULTS: The majority of participants (71%) had incomes \leq 200 FPL. Whites were more likely to be cotinine-verified abstinent at 6 month follow-up (OR = 2.66, 95% CI 1.41, 5.02, $p = 0.004$). Median proximity was 655m (0.41 miles) for African Americans and 974 m (0.61 miles) for Whites. Few outlets were located within 500m of residences (median of 1 for African Americans and 0 for Whites). Neither proximity nor density within 500m was associated with smoking cessation. African American participants had a median of 31 outlets within 1km and the median for Whites was 20. Each additional outlet within 1km lowered odds of quitting by 2% (OR = 0.98, CI % 0.96, 0.99, $p = 0.01$). Race and abstinence had statistically significant associations in each model. We found an interaction between race and outlet density within 1km ($p = 0.04$). Separate adjusted models by race showed that greater outlet density within 1km decreased African Americans odds of quitting (OR = 0.97, 95% CI 0.96, 0.999, $p = 0.04$), but there was no association for Whites.

CONCLUSIONS: Distribution of tobacco outlets may be a contributing factor to tobacco-related racial health disparities, even among smokers who are willing to quit and are receiving smoking cessation assistance. Future studies are needed to inform policy on the tobacco retail environment in order to further reduce smoking prevalence and health disparities.

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DOCUMENTATION OF ASSISTANCE PROVIDED BY PRIMARY CARE PROVIDERS TO SUPPORT SMOKING CESSATION AMONG ASIAN AMERICAN PATIENTS

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Background: Clinical practice guidelines recommend addressing tobacco use by the 5 As (Ask, Advise, Assess, Assist, and Arrange). Asian American male immigrants have high rates of smoking. This study examined the documentation of “Assist” among Chinese, Korean, and Vietnamese-speaking patients.

Methods: We conducted content analyses of progress notes abstracted from electronic health record (EHR) of 106 male smokers who enrolled in one of the two smoking cessation intervention trials. De-identified progress notes, limited to one primary care visit immediately prior to trial enrollment, were coded for presence or absence of “Assist” and the types of assistance documented (medication types, education or counselling, or quitline referrals). We used generalized estimating equations (GEE) to adjust for provider clusters and examined the associations between patient characteristics (demographics, health conditions, patient’s readiness as assessed by providers) and EHR-documented “Assist.”

Results: The participants’ mean age was 56 (range: 28–73), with 62% Vietnamese, 24% Korean, and 14% Chinese. The mean cigarettes smoked daily was 9.4. Most patients (90%) had at least one chronic conditions such as diabetes (30%), hypertension (59%), or hyperlipidemia (68%). The overall documentation rate of “Assist” was 14%; among patients who were ready for quitting, 80% had “Assist” documented. Most received a single type of assistance (67%). Medications (53%) and education or counselling (47%) were most frequently documented; 20% were referred to quitline. Nicotine patches were most frequently prescribed (63% of those offered medications). A substantial portion (27%) of the patients declined provider’s assistance. GEE model found that patients who were documented as “contemplative or ready” were most likely to be provided with assistance when compared to patients documented as “precontemplative or not motivated” (OR: 9.1; $p = 0.02$) or to those without documentation of readiness for quitting (OR: 28.1; $p < 0.001$). No other patient characteristics examined were associated with the documentation of “Assist.”

Conclusion: Documentation of “Assist” was associated with providers’ assessment of patients’ readiness for quitting. One in four patients declined assistance when offered. Future investigation is warranted to determine barriers for providing assistance to smoking patients, particularly in addressing patients’ low motivation for quitting.

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EVALUATING A UNIVERSITY TOBACCO-FREE CAMPUS POLICY USING GEOSPATIAL TECHNOLOGY

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Problem and Significance: A college campus implemented a tobacco-free policy in 2016 that banned the use of tobacco products, such as cigarettes, e-cigarettes, smokeless tobacco, and hookah. However, tobacco use continued to be observed on campus. To analyze this newly implemented tobacco-free policy a cross-sectional study using a campus wide survey and observational geospatial data of tobacco policy violations was implemented. Together the two evaluation methods were used to determine next steps for implementation and increased enforcement of the tobacco-free policy.

Description: The survey collected information regarding knowledge of the tobacco-free policy, intention to intervene if observed tobacco-free policy violations occur, and opinion of the tobacco-free policies overall effect. The geospatial data was collected using ArcGIS Collector, which is a mobile application. With the ArcGIS Collector application, points of observed tobacco-free policy violations are saved on volunteers’ mobile devices. These violation coordinate points are all uploaded to ArcGIS online to create a map that can be further analyzed to determine where on campus violations are occurring.

Results: The survey indicated a lack of knowledge of the tobacco-free policy at the University. A total of 72.4 hours were spent collecting observational data that reveals where tobacco use continues on campus. The final map created on ArcMap had a centralized mean and median along with no apparent directional distribution. Therefore, no hotspots could be identified since tobacco policy violations were occurring all across campus.

Conclusions: The created map allows campus policy makers to visualize where tobacco policy enforcement needs strengthening. As more people contribute to the policy violation data the hotspots and clusters may become more apparent. However, even with no identified hotspots the map indicates that the policy needs to be re-implemented campus wide. Since violations were occurring all across campus there needs to be focus of policy education and enforcement all over campus. This evaluation technique can be used to continuously collect data and determine areas of campus that need focus. In this study the recommended steps were re-implementing the tobacco-free policy. With the growing number of colleges and universities creating tobacco-free policies, new and innovative evaluation techniques are needed to ensure the policies are resulting their desired effect: reduced smoking on campuses.

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EXECUTIVE FUNCTION IN RURAL OLDER ADULT SMOKERS: INFLUENCE OF DEPRESSION AND NICOTINE DEPENDENCE

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Introduction. Rural older adults are an underserved population with disproportionately high rates of smoking and smoking-related morbidity and mortality. Cessation efforts might be difficult among older adults given the role of executive function, top down mental processes that are necessary for control of behavior. Approximately one-third of older adults have deficits in executive function, which may affect behavior change. This pilot project aimed to determine baseline executive function levels in older adult smokers and addressed whether depression and nicotine dependence are related to executive dysfunction to inform the development of a future cessation trial.

Methods: The sample included 40 adults recruited from two primary care clinics in North Carolina. Inclusion criteria were over 60 years of age, smoked 100 cigarettes in lifetime, currently smoked an average of five cigarettes/day, and residential address in a rural census tract. Global Executive Composite (GEC) and Behavioral Regulation Index (BRI) were measured using the Behavior Rating Inventory of Executive Function-Adult (BREIF-A). Nicotine dependence (ND) and screening for clinical depression (CD) were assessed using the Fagerstrom Test and Center for Epidemiologic Depression Scale-10, respectively. Analysis of covariance methods were used to determine whether executive function was related to CD and ND, adjusting for age. Non-directional tests were performed with significance set at 0.10 for this exploratory analysis.

Results: Among the 40 smokers, 33% had executive function difficulties, 43% reported moderate/high ND and 36% screened positive for CD. Smokers with CD had significantly greater executive function difficulties than those without CD (GEC $p=0.0003$, BRI $p<.0001$), and moderate/high ND was associated with greater executive function difficulties compared to those with milder ND (BRI $p=0.0942$). Together CD and ND explained 50% of the variability of GEC scores.

Conclusions: Executive function difficulties, which may impact smoking cessation success, are common in rural older adult smokers and associated with depression and nicotine dependence severity. Smoking cessation interventions for older smokers should account for baseline executive function, a common age-related barrier to behavior change. Interventions aimed at improving executive function paired with smoking cessation interventions may be warranted in this population.

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PSYCHIATRIC AND SUBSTANCE USE SYMPTOMS: RELATION TO MOTIVATION AND SELF-EFFICACY TO QUIT SMOKING AMONG PSYCHIATRIC INPATIENTS

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The current study examined the relationships between readiness/motivation to quit, past quit attempts and psychiatric symptoms as well as substance use among 216 adult smokers with serious mental illness (SMI) receiving psychiatric inpatient care and enrolled in a smoking cessation study. Of 216 participants, 55 (44.4%) reported that their current goal is “to quit completely,” 22 (17.7%) “to quit smoking, but realize a slip is possible,” 18 (14.5%) “to smoke occasionally, when the urge is strong,” 1 (0.8%) “to quit smoking for a limited time,” 19 (15.3%) “to be able to control how much I smoke,” and 9 (7.3%) having “no goal.” Regression analyses showed that greater depressive symptoms significantly predicted reduced confidence in quitting (likelihood of success) and greater anticipated difficulty of quitting smoking, controlling for gender and nicotine dependence. Readiness to quit, desire to quit, or willingness to work hard at quitting did not differ as a function of depressive symptoms. Severity of anxiety, psychotic, or emotional liability symptoms did not predict any of these motivation variables. On the other hand, those with more frequent emotional/psychological problems caused by alcohol use reported significantly greater willingness to work hard at quitting, greater number of past serious quit attempts and quit attempts that lasted over 24 hours, controlling for gender and nicotine dependence. However, frequency of emotional problems due to alcohol did not significantly predict the longest duration of abstinence in the past quit attempts. None of the psychiatric symptoms predicted the number of or the longest duration of past quit attempts. These findings indicate that over 60% of individuals receiving psychiatric hospitalization have quitting smoking as a goal, suggesting their receptivity to smoking cessation treatment and highlighting the importance of developing efficacious tobacco cessation intervention approaches for this SMI population. Findings also suggest the importance of approaches to engender greater self-efficacy and resilience during quitting for smokers with higher levels of depressive symptoms.

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YOUNG ADULT OUTCOME EXPECTANCIES FOR ELECTRONIC NICOTINE DELIVERY SYSTEM USE

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This study examined the associations between outcome expectancies, ENDS use, and cessation outcomes among a sample of young adults (N=304; mean age: 22.4; 38.2% female; 62.8% white). We hypothesized that more positive outcome expectancies would be associated with more use days, higher daily use frequency, fewer reports of cessation, and shorter cessation duration. Participants who self-identified as regular ENDS users and self-reported using within a week of data collection completed a survey on the Amazon MTurk platform. Measures included demographics, ENDS use and cessation behaviors, and an adapted version of the Smoking Consequences Questionnaire. Mean number of days smoked in the past 30 days was 21.6 with 40.5% of participants reporting daily use. 37.5% of participants reported at least one prior quit attempt with an average length of 26.55 days. Average length of non-use excluding quit attempts was 15.55 days. More men than women attempted quitting ENDS. T-tests revealed gender differences across outcome expectancies. We fit Poisson regression models regressing the three outcome variables onto covariates of sex, past year combustible cigarette use, and frequency of ENDS use 12 months prior. We then partially adjusted for each outcome expectancy in a subsequent model. Males were more likely to report a quit attempt and report a longer quit duration than females. Frequency of ENDS use 12 months prior was associated with more past month use days and higher frequency of use. Past year combustible cigarette use was associated with lower likelihood of reporting a quit attempt and shorter quit duration. Weight control, negative affect relief, and boredom relief expectancies were associated with greater frequency of use, lower likelihood of reporting a quit attempt, and shorter quit duration. ENDS outcome expectancies are potent predictors of ENDS use and cessation outcomes. Interventions aiming to achieve cessation, particularly among ENDS and combustible tobacco co-users, should target these expectancies.

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A MIXED METHODS APPROACH TO UNDERSTANDING GROUP COHESION IN THE BREATHEASY SMOKING CESSATION STUDY

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Background: *BreatheEasy* is a NCCIH-funded randomized clinical trial examining the efficacy of yoga as a complementary therapy for smoking cessation. From 9/2012 – 6/2016 12 cohorts of smokers received cognitive behavioral therapy for smoking cessation and either Iyengar yoga (n=113) or a wellness control class (n=114). Smoking cessation met once weekly; yoga or wellness met twice weekly for 8 weeks. Qualitative focus groups were conducted with 121 participants (5–13 per group) in both the yoga (n=61) and wellness (n=60) cohorts.

Methods: Quantitative measures included a 22-item Group Cohesion Scale (GCS); parallel analysis and the scree test were used to identify subscales. Focus group participants were asked about their study and quitting experiences; transcripts were coded by two qualitative analysts for Applied Thematic Analysis.

Results: At 8 weeks, 28.1% of yoga and 23.5% of wellness participants reported 7-day point prevalence abstinence (PPA). Dose of yoga received was significantly associated with greater odds of 7 day PPA at 8 weeks (p<.05). Quantitative analysis of the GCS resulted in a 2-component solution: 12 items on Positive Cohesion and 7 items on Negative Cohesion scales. Coefficient Alpha (internal consistency reliability) was very good (.90) for Positive Cohesion and adequate (.73) for Negative Cohesion. The correlation between the 2 subscale scores was -.41. Both positive and negative cohesion are significantly associated with self-reported quit at 6 months (OR 2.21 and 1.99 respectively) among wellness participants, but not yoga participants. Qualitative data indicates that the group was an essential part of the study experience; this was true of both cohort-specific classes (i.e. yoga or wellness) and smoking cessation classes. Regardless of success in quitting, most participants found the group experience to be important: groups provided accountability, strategies for quitting and social support. Qualitative data analysis of comments about the group by cohort and by quantitative GCS are presented to further understand the impact of the group-based delivery of this intervention.

Conclusions: This is the first large scale trial of yoga for smoking cessation with men and women. Qualitative and quantitative data together provide understanding of the importance of group cohesion and a group-based intervention experience for trial participants.

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“ORGANIC,” “NATURAL,” AND “ADDITIVE-FREE” CIGARETTES: DO DISCLAIMERS OFFSET ADVERTISING CLAIMS’ EFFECTS ON RISK PERCEPTION?

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Introduction. The U.S. Tobacco Control Act restricts advertising or labeling that suggests that a tobacco product is less harmful than another commercially marketed product. Natural American Spirit, a cigarette brand with rapidly increasing market share, frequently uses “organic,” “natural,” or “additive-free” claims in advertising. Historically, brands such as Winston and Nat Sherman have also used similar claims in their advertising. We examined how “organic,” “natural,” and “additive-free” advertising claims and corresponding disclaimers affect perceptions of cigarettes’ harm.

Methods. Participants were a national probability sample of adults in the US ($n = 1,114$). We conducted a between-subjects experiment in which participants viewed a Natural American Spirit cigarettes ad claiming they were “organic,” “natural,” “additive-free,” “light,” or “regular,” and with or without a matching disclaimer (e.g., “Organic does not mean a safer cigarette.”). The outcome was perceived harm of the advertised cigarettes. Among smokers ($n = 344$), we also assessed interest in switching within their current brand to cigarettes with this characteristic (e.g., “additive-free”).

Results. Advertising claims in the ad had a large effect on perceived harm (Cohen’s $d = 0.87$, 95% CI: 0.47–1.29). Claims of cigarettes being “organic,” “natural,” or “additive-free” reduced perceived harm from the advertised cigarettes, as compared to “regular” and “light” claims. Disclaimers had a small effect, increasing perceived harm ($d = 0.25$, 95% CI: 0.08–0.41). The problematic claims also increased smokers’ interest in switching while disclaimers had no effect on smokers’ interest in switching.

Conclusions. “Organic,” “natural,” and “additive-free” claims may mislead people into thinking that the advertised cigarettes are less harmful than other cigarettes. Disclaimers did not offset these misperceptions of harm. The U.S. Food and Drug Administration should restrict the use of these misleading claims in tobacco advertising. Our findings may also support the regulatory efforts of the 180 countries that have committed to banning misleading claims under the WHO Framework Convention on Tobacco Control.

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ASSOCIATIONS OF RESPONSES TO PICTORIAL CIGARETTE WARNING LABELS WITH CHANGES IN QUITTING ATTITUDES, BELIEFS, AND INTENTIONS

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Background: The tobacco industry contested the US FDA’s efforts to strengthen warning labels on cigarette packaging based on claims that pictorial warning labels (PWLs) evoke emotion rather than inform consumers. The industry further argued that there is no evidence that PWLs promote smoking cessation. To experimentally test these claims, we examined smokers’ responses to the nine court-defeated FDA-proposed PWLs following a 10-day exposure period, and their associations with changes in quitting attitudes, beliefs, and intentions over this period.

Methods: Non-treatment-seeking, daily smokers ($N = 321$; mean age = 43.3; 58.9% male; 54.2% Black; mean cigarettes per day = 15.2) completed a randomized, parallel design laboratory-based trial during which they received their preferred brand cigarettes affixed with one of nine PWLs for 10 days. We assessed quitting attitudes, intentions, and beliefs at the onset and end of the study. At study end, after completing all measures, smokers rated their PWL on a 5-point scale (1 = not at all, 5 = extremely) comprising 8 cognitive attributes: memorable, understandable, shocking, informative, offensive, boring, relevant, and interesting.

Results: Collectively, mean ratings of the PWLs were high for memorable, understandable, informative, relevant, and interesting attributes (range = 3.4 to 4.0), and low for shocking, offensive, and boring attributes (mean scores = 2.9, 1.7, and 1.5, respectively). Individual PWLs differed on the shocking, offensive, and boring attributes (p ’s $\leq .001$); e.g., quitter PWL was rated as more boring than all but one other PWL. Quitting attitudes, beliefs, and intentions increased over the study (p ’s $< .001$); these changes did not differ by PWL (p ’s $> .2$). Changes in quitting attitudes and intentions were positively associated with all attributes except offensive and boring (p ’s $< .05$); beliefs were not associated with any cognitive attributes (p ’s $> .2$).

Conclusions: Contrary to industry claims, smokers’ ratings of PWLs were generally high for desirable attributes (e.g., informative, interesting) and low for negative attributes (e.g., offensive, boring). Further, responses to desirable—but not negative—attributes were associated with increases in quitting attitudes and intentions. Results suggest that repeated exposure to PWLs is unlikely to adversely emotionally impact non-treatment-seeking smokers, and instead, may likely increase attitudes and intentions, which may lead to cessation.

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CORRELATES ASSOCIATED WITH PAST 30 DAY SMOKING IN A PRE-DOMINANTLY MEXICAN AMERICAN YOUNG ADULT SAMPLE

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Although literature on tobacco use is extensive, there is an insufficient amount of research that focuses on Hispanic young adults and smoking. The aim of the study is to identify correlates associated with past 30 day smoking in Hispanic young adults.

Participants on the U.S./Mexican border ($n=725$; ages 18–30; $M_{age}=21.4$, $SD=2.96$; 71.9% female; 60% Mexican American) were recruited through digital media and radio. Consent was completed prior to proceeding with the online assessment (tobacco use, sociodemographic factors, daily stressors, social activities, acculturation, and past 30 day binge drinking).

Fifteen percent reported past 30 day smoking, 44.1% reported lifetime binge drinking, and 25% reported past 30 day binge drinking. A logistic regression (0 = no, 1 = yes; Nagelkerke $R^2=20\%$) assessed sociodemographic and psychosocial/health correlates of smoking (≥ 1 cigarette in past 30 days). Correlates associated with higher odds of past 30 day smoking were: education (High School/GED diploma compared with graduate coursework, marginally; OR = 4.24, CI [0.97, 18.55]), income (less than \$15,000 compared with $> \$50,000$; OR = 2.73, CI [1.16, 6.39]), and past 30 day binge drinking OR = 4.19, CI [2.40, 7.31].

That lower income was again associated with increased smoking suggests the continued assessment of income and other related factors such as access to education about the consequences of smoking and opportunities to quit smoking. That lower education was associated with greater smoking suggests that education may be a protective factor against smoking, and that the university environment, for example, may provide fewer social opportunities to smoke and greater access to prevention and cessation programs. Finally, the strong association observed here between smoking and drinking suggests that factors associated with smoking and drinking such as mood, peer group, perceived discrimination, and perceived consequences associated with use are also assessed. Future studies should continue to assess these relationships in Hispanic young adults, keeping in mind while doing so that more nuanced characteristics relative to other ethnocultural groups are included such as education about smoking consequences, access to prevention and cessation programs, and factors related to polysubstance use.

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FACTORS PREDICTING CLIENT RE-ENROLLMENT INTO A TOBACCO CESSATION QUITLINE

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Smoking is a chronic relapsing disorder and a large proportion of smokers who attempt to quit relapse within the first six months. Tobacco cessation quitlines are effective strategies to disseminate evidence-based cessation services and may have potential to re-engage former clients. However, little is known of factors that influence relapsed clients to re-enroll in cessation services. The purpose of this study was to examine factors that may predict reenrollment in the Arizona Smokers' Helpline (ASHLine) - Arizona's state quitline. Data collected from January 2011-June 2016 ($N=49,284$) was analyzed; demographics, smoking history, and nicotine dependence were assessed at baseline. Descriptive statistics were used to identify differences in baseline, in-program, and program follow-up outcomes between clients who enrolled only once and more than once (re-enrollees). Logistic regression was used to predict the odds of re-enrollment. Mean client age was 49.0, 84.1% had at least a high-school education, and 79.9% reported being White/non-Hispanic. Almost 10% of the sample had enrolled more than once. Likelihood of reenrollment was significantly associated with being male (OR = 0.78; CI: 0.70, 0.87) and reporting a mental health condition (OR = 1.23; CI: 1.10, 1.37) at the time of enrollment. Finally, clients who reported not being 30-day abstinent at 7-month follow-up had an odds ratio of re-enrolling 2.77 times that of someone who was 30-day abstinent at 7-month follow-up (95% CI: 2.40, 3.20). Identifying factors that predict client re-enrollment can assist quitlines in developing recruitment messages and service offerings tailored to those most likely to re-enroll. Eight-two percent of clients who were still smoking seven months after their first enrollment did not re-enroll into services; this indicates a missed opportunity by quitlines to re-engage smokers. Quitline efforts in this area should be bolstered through strategies to re-engage exiting clients into cessation services and by offering specialized clinical protocols to aid successful long-term smoking behavior change.

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FEASIBILITY AND PRELIMINARY EFFECTS OF INCORPORATING SMOKING-RELATED CONTEXTS INTO AN EXTINCTION-BASED CESSATION THERAPY

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Combining very low nicotine content (VLNC) cigarettes with nicotine patch prior to quitting smoking reduces dependence and withdrawal symptoms, and improves cessation outcomes. These beneficial effects are thought to operate via a process of extinction, wherein the reinforcing effects of nicotine are uncoupled from the behavior of smoking. Increasing the variety of contexts in which this extinction process occurs may help to improve the efficacy of this treatment. In this pilot feasibility trial, we examined the incremental benefit of adding laboratory cue exposure sessions (multiple context extinction; MCE) to VLNC/patch smoking cessation treatment. Adult daily smokers participated in a cessation trial in which they smoked VLNCs while wearing nicotine patch for 3 weeks prior to making a quit attempt. During the pre-quit period, participants attended six, 60-min laboratory sessions, in which they smoked 4 VLNCs while viewing a series of images. Participants (n=34) were randomized to one of two conditions, which differed only in the content of the images presented: personal and unfamiliar smoking-related contexts (MCE+) or nature contexts (MCE-). Cue-elicited craving was assessed at baseline (prior to randomization) and following 24 hrs abstinence (post-quit). At each MCE visit adherence to VLNCs was assessed via timeline follow-back, and dependence was measured with the Fagerstrom Test of Nicotine Dependence. Participants were provided with nicotine patches during the quit attempt and returned to the lab 1, 3, 6, and 10 weeks post-quit to assess smoking outcomes. Randomized participants completed an average of 5.6 (+/- 1.1) MCE+ sessions and 5.6 (+/- 1.2) MCE- sessions. Self-reported adherence with patches and VLNCs during the pretreatment period was excellent, with patch use reported on >99% of days and VLNCs comprising 97.5% of all cigarettes smoked. Adherence did not differ by group on any measure. For both groups (MCE+ and MCE-) dependence and cue-elicited craving decreased from baseline to post-quit (both p's < .05). During the quit attempt, 35.3% of smokers in the MCE+ group maintained continuous abstinence through week 10, compared with 17.6% in the MCE- group (ns). These preliminary results support the feasibility of multiple context extinction and suggest that this may be a promising intervention to improve cessation outcomes. Future research in a larger sample is warranted.

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LIVE COUNSELOR CONTACT IN A FACEBOOK INTERVENTION PREDICTS SMOKING CESSATION OUTCOMES

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Background: Digital smoking cessation interventions frequently use automated delivery of content and it is unclear if live counseling provides added benefits. We investigated how well participants engaged with live counseling sessions compared to automated content in a Facebook intervention and if attending these sessions predicted smoking abstinence.

Methods: The Tobacco Status Project (TSP) is a 90-day Facebook intervention for young adults (18–25) utilizing automated posts and weekly sessions with a smoking cessation counselor in private Facebook groups tailored to readiness to quit smoking (precontemplation, contemplation, preparation). Data came from the treatment group of a randomized controlled trial (N=251). The analytical sample consisted of 2,943 posts, 331 (11%) of which were live-counselor initiated, the rest were automated. Logistic regression analyses examined whether extent of counselor contact predicted saliva cotinine verified abstinence at 3 months controlling for gender, readiness to quit, and extent of engagement with automated content. Poisson regressions were used to predict participant engagement (number of comments) based on post content area, stratified by readiness to quit smoking and controlling for Facebook group and post timing.

Results: Participation in live counseling predicted 3-month biochemically verified abstinence, (adjusted Odds Ratio=1.087 [95% CI 1.002, 1.181]). All posts generated 8,403 participant comments (M=2.8 comments per post). Participants in precontemplation engaged as much with the smoking cessation counselor as they did with the most engaging automated content (motivational content). Participants in contemplation engaged significantly less with the counselor than with the most engaging automated content (motivational content). Participants ready to quit within the next 30 days engaged significantly more with the counselor than with the most engaging automated content (cessation advice).

Discussion: In digital interventions, counselor contact may be beneficial in addition to automated posts at yielding engagement and abstinence; however, participants engage differently with live counseling according to their readiness to quit smoking.

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PATTERNS OF POLYTOBACCO USE AMONG A COMMUNITY SAMPLE OF SOUTHERN AFRICAN-AMERICAN AND WHITE CIGARETTE SMOKERS

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Many cigarette smokers concurrently use other tobacco products such as cigars or cigarillos (i.e., polytobacco use). Studies have found that African Americans (AAs) are more likely than Whites to be polytobacco users insofar as they simultaneously use cigarettes and cigarillos. Such studies generally have excluded use of smokeless (chew) tobacco. Chew tobacco use however is common among Whites in rural areas and among Whites in the southeastern US. Including chew may reveal new patterns of polytobacco use and also might decrease racial disparities in that use. This preliminary study is the first to examine polytobacco and chew use among southern AA and White adults. Participants were a random household sample of 1,670 AA and White adults who ranged in age from 19 to 97 years (Mean = 42.6, sd = 15.6). They completed a brief, anonymous survey on their demographics (age, gender, income, education); ever and current cigarette smoking; number of cigarettes smoked per day; use of cigarillos, cigars or pipes; and use of chew. The sample included 512 current cigarette smokers upon whom analyses are based. Univariate analyses revealed no racial difference in cigarette smoking prevalence (Whites = 32.7%, AAs = 31.7%), and two unique patterns of polytobacco use: Significantly more Black than White men used cigarettes in combination with cigarillos, cigars, or pipes (Polytobacco Pattern 1) but there were no racial differences in this pattern among women. Significantly more Whites than Blacks (both genders) used chew concurrently with cigarettes, chew concurrently with cigarillos, and chew concurrently with both (Polytobacco Pattern 2). In the logistic regression using demographic variables to predict concurrent use of cigarettes and cigarillos, cigars, or pipe (Pattern 1), race was not significant, but age (lower use by older people), education (lower use with higher education), and gender (lower use among women) were significant. In the logistic regression predicting concurrent use of chew and any other tobacco product, race was significant with Whites 3.8 times more likely than Blacks to exhibit Pattern 2. Age and gender were not significant, but education (higher) was associated with lower use. AA disparities in polytobacco use were not found when chew was included in analyses, and unique racial patterns of polytobacco use were revealed, with potentially dangerous use patterns and racial disparities among Whites.

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SIRI, HOW DO I QUIT SMOKING? ONLINE CESSATION INFORMATION SEEKING BY U.S. SMOKERS, 2005–2015

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Background: Many services exist online to help smokers who want to quit, but recent estimates of the number of smokers seeking those services are not readily available. The most recent available estimates indicate 9% of all US adults sought cessation information online in 2006 (Fox S. Health Topics. Pew Research Center; 2011). This study aimed to determine consumer demand for online cessation information.

Methods: We analyzed longitudinal data from the Health Information National Trends Survey (HINTS), a nationally representative, population based survey conducted by the National Cancer Institute. In 2005, 2011, 2013, and 2015, the survey asked US adults whether they (1) ever go online to use the internet, WWW, or email; and (2) had used the internet to look for information about quitting smoking within the past 12 months. We estimated the proportion and number of U.S. adult cigarette smokers who went online and searched for cessation information in each of those years. Current smokers were defined as “everyday/someday” smokers, with ≥ 100 lifetime cigarettes. Cross-year comparisons were assessed with logistic regression.

Results: The proportion of US adult smokers who went online increased from 55.8% in 2005 (95% CI = [51.3, 60.0]) to 73.0% in 2015 [66.1, 79.0]. The proportion of U.S. adult smokers who searched online for cessation information rose over the past decade: 17.3% in 2005 [13.7, 22.0]; 20.9% in 2011 [15.5, 28.0]; 25.6% in 2013 [19.7, 33.0]; and 23.4% in 2015 [16.9, 31.0], $p=0.04$. An alternate analysis, in which the denominator included only smokers who reported using the internet, revealed that approximately 1/3 of internet-using smokers searched for cessation information in each year (range: 29.4% to 32.7%). In 2015, the most recent year, an estimated total of 8,494,524 smokers searched online for cessation help.

Conclusions: Each year, over 8 million American smokers look for cessation assistance online. Among internet users, demand for online cessation information has remained stable over the past decade. However, increases in the proportion of smokers who use the internet has translated to increases in the proportion of smokers actively searching for cessation information online. Improvements to the effectiveness of online cessation interventions, as well as strategies that increase access to the internet among populations with high smoking rates, both have potential to reduce the population prevalence of cigarette smoking.

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SMOKERS' PERCEPTIONS AND LIKELIHOOD OF FUTURE USE OF THE ELECTRONIC WATERPIPE

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Introduction: The reduction of young adult waterpipe smoking remains a national public health priority. Although there has been expanding efforts to decrease traditional waterpipe (TW) use, there is a new waterpipe product on the market that has yet to be investigated. To date, there are no known studies investigating electronic waterpipe (e-waterpipe) smoking. As such, the proposed research will aid in the development of efforts to identify and evaluate the novel e-waterpipe.

Methods: Regular electronic cigarette users (n=26) aged 18–34 were given twenty minutes to smoke an e-waterpipe in a laboratory setting where smoking behaviors were recorded. Subjective and objective measures were collected pre- and post-smoking. Measures included spirometry parameters and questionnaires on perceptions of use and likelihood of future use.

Results: Approximately 76.9% felt positive about smoking an e-waterpipe and 80.8% intended to speak positively about their smoking experience. Overall, 73.1% reported that e-waterpipe use was satisfying. When comparing the e-waterpipe to their personal electronic smoking devices, 42.3% believed that smoking e-waterpipe was safer and 30.8% thought e-waterpipe use was healthier. More than half of the participants reported more positive health effects from smoking the e-waterpipe compared to their own smoking device.

Conclusion: Findings suggest that e-waterpipe use has the potential to become popular within the emerging adult population. This pilot study demonstrated that users had positive perceptions toward willingness and likelihood of future use, attitudes, sensory beliefs and expected health outcomes. Further research is necessary to understand prevalence of use and the associated health risks and to compare the risks of e-waterpipe and traditional waterpipe smoking.

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SMOKING HABITS AND AWARENESS ABOUT ANTI-SMOKING ACTS AMONG GENERAL PUBLIC IN GURGAON, HARYANA, INDIA

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Background: India is the world's third largest tobacco-growing country. The Indian scenario as far as tobacco consumption is concerned is far worse because of the prevalence of the tobacco chewing habit which covers a wide spectrum of socioeconomic and ethnic groups and is spread over urbanized area as well as remote village. Tobacco use is alarming in terms of its current and projected future impact on global mortality. Recent shift in global tobacco consumption to developing countries indicate that an estimated 930 million of the world's 1.1 billion in India alone. Despite the facts, that the harmful effects of tobacco chewing and smoking are widely known, many young people start smoking during adolescence, largely because they believe that smoking will boost their social acceptability and image. This study was contemplated with an aim to assess tobacco / smoking habits and awareness about anti-smoking act among general public in Gurgaon, Haryana, India.

Method: A structured questionnaire consisting of 14 questions related to tobacco/ smoking habits and awareness about anti-smoking act were asked to general public and their response was recorded. Random sampling method was used and data was collected from a cross-sectional survey. Anti-tobacco counselling was given on the spot and followed.

Results: The study population consisted of total 430 individuals, male 364 (84.65%) and females 66(15.34%). Then the questionnaires were asked and statistically analyzed. Around 286 (78.57%) from 364 male were indulged in some form of tobacco usage (smoker =32.86%, tobacco chewer = 16.78%, both =11.18 %, alcohol +tobacco user =21.67%). In the present study, most common cause of tobacco use was pleasure 40.5%, inducing factor were friends 53.1% followed by parents and siblings. 36.20% patients used tobacco as second hand exposure in job places. 54.8% were aware about the anti-smoking act in public places, so only 8.6% people from all males enrolled, were smoking in public places.

Key words:Tobacco chewing, smoking, anti-smoking act, prevalence.

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TOBACCO USE, AWARENESS AND CESSATION AMONG MALAYALI TRIBES, YELAGIRI HILLS, TAMIL NADU, INDIA

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BACKGROUND: Health is a state of complete wellbeing free from any discomfort and pain. Despite remarkable world-wide progress in the field of diagnostic, curative and preventive medicine, still there are large populations of people living in isolation in natural and unpolluted surroundings far away from civilisation, maintaining their traditional values, customs, beliefs and myths. India has the second largest tribal population of the world next to the African countries. About half of the world's autochthonous people live in India, thus making India home to many tribes which have an interesting and varied history of origins, customs and social practices. The present study was conducted to assess the tobacco use, awareness and its effect on health among Malayali tribes, Yelagiri Hills, Tamil nadu, India.

METHODOLOGY: The inhabitants of the 14 villages of the Yelagiri hills, who have completed 18years and residing for more than 15years present on the day of examination and who were willing to participate in the study were included.

Data was collected from a cross-sectional survey, using a Survey Proforma, clinical examination and a pre-tested questionnaire which included Demographic data, tobacco habits. An intra-oral examination was carried out by a single examiner to assess the Oral Health Status using WHO Oral Health Surveys – Basic Methods Proforma (1997).SPSS version15 was used for statistical analysis.

RESULTS: Results showed that among 660 study population, 381(57.7%) had no formal education. Among the study population 75% had the habit of alcohol consumption. Of those who had the habit of smoking, 26% smoked beedi, 10.9% smoked cigarette, 65% chewed raw tobacco, 18% chewed Hans and 28% had a combination of smoking and smokeless tobacco usage. The reason for practicing these habits were as a measure to combat the cold, relieving stress and body pain after work, and the lack of awareness of the hazards of the materials used. Prevalence of oral mucosal lesions in the study population was due to tobacco usage and alcohol consumption and lack of awareness regarding the deleterious effects of the products used.

CONCLUSION: From the results of this study it may be concluded that the Malayali tribes were characterized by a lack of awareness about oral health, deep rooted dental beliefs, high prevalence of tobacco use and limited access to health services.

KEY WORDS: Malayali tribes, Tobacco usage, oral health status, WHO oral health proforma, Beliefs.

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B336

6:15 PM-7:15 PM

TREATMENT NEEDS, SMOKING CHARACTERISTICS, AND MENTAL HEALTH FUNCTIONING AMONG COPD HELPLINE CALLERS

Amanda R. Mathew, PhD¹, Cherylee Bridges, RN², Miriam Guzman, MHA¹, Susan Yount, PhD¹, Ravi Kalhan, MD, MS¹, Brian Hitsman, PhD¹¹Northwestern University Feinberg School of Medicine, Chicago, IL; ²American Lung Association, Springfield, IL

Background: Telephone quitlines are an effective population-based strategy for smoking cessation, particularly among individuals with tobacco-related diseases such as Chronic Obstructive Pulmonary Disease (COPD). Expanding quitline services to provide patient education and address other clinical issues among COPD patients is potentially beneficial; however, data are needed to identify specific treatment needs in this population.

Methods: We examined treatment needs, smoking status, and mental health symptoms among individuals with COPD who received services from the American Lung Association (ALA) Lung Helpline and Tobacco Quitline. Data were drawn from a nationwide, phone-based needs assessment survey of 6194 participants conducted between 2011 and 2017.

Results: Participants were older adults (57.6 ± 9.5 years), 83.8% were Non-Hispanic Caucasian, and 66.9% were women. Nearly all participants (94.8%) saw a doctor or medical professional regularly, but more than half (53.6%) were not receiving treatment from a lung specialist. Most participants (73.6%) were interested in receiving additional information on lung health topics. The majority of participants reported no prior instruction on breathing exercises (66.8%), energy conservation (74.8%), or clearing their airway (68.5%). Participants reported significant disease burden: 78.1% reported disease-related interference in daily activities, 29.6% had been hospitalized within the past 6 months for their breathing, and 16.3% were not confident in managing their COPD. Current smokers (80.2%) were highly nicotine dependent, with 82.9% smoking more than 10 cigarettes per day and 91.5% smoking within 30 minutes of waking. Lastly, nearly half of participants (44.9%) reported experiencing current symptoms of anxiety or depression. Those with vs. without anxiety/depression had higher rates of disease-related interference (83.9% vs. 73.5%, $p < .001$) and past-6 month hospitalization (33.4% vs. 28.3%, $p < .001$).

Conclusion: This population-based needs assessment survey identified strong interest in lung health education among individuals with COPD. Specific areas of need included self-management strategies for breathing and energy conservation, information on disease management, and nicotine dependence treatment. Further, anxiety and depression were commonly reported comorbidities that were associated with more severe disease impairment and higher hospitalization risk, highlighting the importance of addressing mental health issues. Phone-based outreach services that target multiple behavioral needs of COPD patients are a promising strategy to improve outcomes in this population.

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Friday
April 13, 2018
8:00 Am-9:15 Am

Symposium 32

8:00 AM-9:15 AM

PHYSICAL ACTIVITY RESEARCH IN THE 21ST CENTURY: HARNESSING KEY PATHWAYS FOR ACHIEVING GLOBAL IMPACT

Abby C. King, PhD¹, James F. Sallis, PhD², Sandra J. Winter, PhD, MHA³, Abby C. King, PhD¹, Tracy Orleans, PhD⁴¹Stanford Prevention Research Center, Palo Alto, CA; ²UC, San Diego, La Jolla, CA; ³Stanford University School of Medicine, Palo Alto, CA; ⁴Robert Wood Johnson Foundation, Princeton, NJ

Modest and uneven progress in reducing the physical inactivity epidemic in the U.S. and worldwide is not sufficient to improve population health. This symposium highlights three potentially transformative pathways for creating the conditions for more active populations: improving built environments, expanding citizen science, and leveraging information and sensing technologies. Dr. James Sallis will describe how evidence from the International Physical Activity and Environment Network (IPEN) is being translated into actionable strategies for promoting “active cities” worldwide. Dr. Sandra Winter will present findings from the *Our Voice* Citizen Science Global Network, in which residents from ethnically diverse communities have successfully changed community environments and policies to promote active living. Dr. Abby King will highlight some of the latest trends in physical activity data capture using cutting-edge technologies that can set the stage for transformative shifts in physical activity surveillance and intervention. Finally, Dr. Tracy Orleans will recommend ways to improve research, combine these strategies and accelerate their application for bigger impact both in the US and globally.

Symposium 32A

EVIDENCE TO GUIDE POLICIES FOR MORE ACTIVITY-FRIENDLY CITIES WORLDWIDE: CONTRIBUTIONS OF IPEN

Dr. James F. Sallis, PhD

A notable trend in the physical activity field in the 21st Century has been an increasing focus on environment and policy factors in shaping physical activity. The basic concept is that 20th Century trends in urban design, automobile-dominated transportation, and technologies transforming work and leisure are root causes of the global epidemics of inactive lifestyles and related chronic diseases. Not only has the evidence in this area grown dramatically, but national and international recommendations and government policies are becoming more consistent with the evidence. Based on studies begun in the US, IPEN (International Physical activity and Environment Network) was launched in 2004 to encourage, support, and coordinate studies of environmental correlates of physical activity, sedentary behavior, and obesity worldwide. The rationale for IPEN was that including worldwide variation in environments would produce more accurate effect sizes, and country-specific data are particularly influential for stimulating local policy change. Twelve countries on 5 continents participated in the NIH-funded IPEN Adult study. Publications to date have documented moderate-to-strong associations of various environmental features with total physical activity, active transport, active recreation, and obesity. A commentary accompanying one paper estimated that 2 million deaths per year worldwide could be averted if everyone lived in activity-supportive communities. An IPEN Adolescent study has been completed, and several countries have collected comparable data on older adults. IPEN investigators are actively engaged in translating research findings to policy and practice through such efforts as disseminating lay summaries of papers, media outreach, presentations at policy-oriented conferences, consulting with local and national governments, and consulting with international groups such as the World Health Organization, World Bank, and multiple advocacy and professional organizations. Concepts such as “walkability” were unknown in public health at the beginning of the 21st century, but in a relatively short time environmental change has become central to public health goals and activities, and city planning, transportation, parks departments, as well as elected leaders of cities, increasingly consider the health consequences of their decisions.

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Symposium 32B

ACTING LOCALLY TO IMPROVE HEALTH GLOBALLY: ENGAGING CITIZEN SCIENTISTS TO CHANGE ENVIRONMENTS AND POLICIES FOR ACTIVE LIVING

Dr. Sandra J. Winter, PhD, MHA

Technological advancements in the 21st century have enabled residents to contribute to science by gathering local data to inform a range of environmental endeavors such as monitoring solar eclipses and documenting trends in bird migration. The evidence-based *Our Voice (OV)* approach to advancing health equity engages citizen scientists in new ways, both expanding the reach of community-engaged research and optimizing its impact. *OV* citizen scientists participate in a 4-step process in which they use a simple mobile app (the Discovery Tool) to document aspects of their community that impact healthy living; meet with other citizen scientists to discuss findings and agree on priorities for action; present their data to local decision-makers; and advocate for lasting positive changes in their local environments. This presentation will highlight research projects that have engaged citizen scientists across cultures and age groups to address a wide variety of community health challenges. Projects in the US have included older adults working to increase food access and walkability in low-income neighborhoods; multi-generational efforts to document and improve safe routes to school; LGBT adults identifying features that promote neighborhood safety and inclusion; and African-American women conducting walkability assessments across multiple cities to inform community improvement plans. At a global level, the Discovery Tool has been translated into 7 languages and the *OV* model has been adapted for use in diverse communities in Chile, Colombia, Israel, South Africa, Taiwan, Mexico and Canada. Social, environmental and policy changes stemming from *OV* include creation of senior-friendly walking maps; planting of a new community garden; formation of an older adult advocacy group at an affordable housing site; installation of street and curb signage to improve pedestrian safety; regeneration of a public art project; outreach to corner store owners to improve healthy food access; allocation of new city funds for sidewalk improvements; and adoption of new community-driven Safe Routes to School campaigns. To build on the successes of this global research platform, an *Our Voice* Global Network was formed in 2016. The Network is committed to building a scientific road map, identifying and sharing measurement tools to track impact, coordinating cross-site comparisons, and generating, refining, and disseminating best practices. Network processes and outcomes will be reviewed.

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Symposium 32C

LEVERAGING THE POWER OF THE MOBILE HEALTH REVOLUTION TO PROMOTE POPULATION-WIDE PHYSICAL ACTIVITY & REDUCE SEDENTARY BEHAVIOR

Dr. Abby C. King, PhD

With the arrival of the smartphone and other mobile and wearable devices, the behavioral health science field is on the cusp of a paradigm shift. The passive sensing capabilities of such devices open the door to near-continuous, often lower-burden assessment of physical activity (PA). In addition, the self-reporting capacities of mobile devices and direct linkages with social and environmental online platforms and datasets (e.g., online social networks; geographical information systems [GIS]) provide access to heretofore unattainable contextual factors influencing PA and sedentary behaviors across different life stages, circumstances, and geographic locations. Of particular note, US subgroups who rely on smartphones for online access at elevated levels include several racial/ethnic minority groups and those with low household incomes and educational attainment. As such, smartphones have the potential to mitigate health disparities and other inequalities. In contrast to traditional epidemiological approaches, mobile health platforms allow for dynamic daily measurement and more nuanced investigation of multiple health behaviors and their surrounding contexts. Academic-technology industry partnerships can liberate such datasets and usher in new insights about longitudinal health behaviors and their dynamic patterns of change. The purpose of this presentation is to highlight some of the latest trends and opportunities in the “big data” field of direct relevance to the promotion of regular PA and reduced sedentary behavior. Among the types of innovative investigations that will be highlighted are results from a global commercial smartphone health behavior app that has captured worldwide patterns and differences in PA “inequality” (the amount of variability in PA levels within a nation), which was shown to be a strong predictor of obesity incidence and linked in the US with city-based walkability levels; leveraging of social interactions in online social networks to influence “off-line” PA levels; harnessing online challenges and similar “gamification” activities to shape increased PA in diverse subpopulations, including those with low general levels of PA; and use of public webcams to crowdsource pedestrian and cyclist behaviors in different locales. Finally, current challenges and future directions in the field will be discussed, along with ways that behavioral medicine scientists can take advantage of these trends in augmenting their research.

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Symposium 33

8:00 AM-9:15 AM

ETHICS, VALUES, AND DIGITAL HEALTH RESEARCH: THE CASE OF FITBIT

Sherri Sheinfeld Gorin, PHD¹, Matthew P. Buman, PhD², Ernesto R. Ramirez, PhD, MS³, Michelle De Mooy, BA, Government; MA, Strategic Communications⁴, Camille Nebeker, Ed.D, M.S.,⁵

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By using digital tools and computational methods, including mobile apps, wearable sensors and social network platforms, we are now able to observe individuals in real time and deploy personalized and just-in-time, adaptive health interventions. Not only are the tools and methods changing, but the research ecosystem is much more diverse. In addition to the traditional academic researchers, the technology industry now collects massive amounts of consumer data which present opportunities to learn about factors influencing human health. Moreover, the tech industry is now a major player in the biomedical and behavioral research arenas. Developing and navigating collaborative relationships between academic and industry partners are challenging due to their different core objectives, yet are critical to the future of ethical and responsible digital health research. Regardless of what entities are involved, the vast quantities of personal—often identifiable—health information created via pervasive sensing and computational techniques are raising new ethical and regulatory challenges. In this symposium, we identify many of these issues with a detailed example of a commercial product - Fitbit, that is used by a growing number of physical activity researchers. Our speakers will present: 1- how a wearable, passive sensor is used in academic research to capture personal health data; 2- the role of an intermediary that facilitates access to data captured by a commercial product; and 3- consumer privacy rights and data use expectations. In closing, our discussant will address the overarching and complex ecosystem for these products, the regulatory challenges to their use, and offer recommendations for advancing ethical and responsible digital health research.

Symposium 33A

WEARABLE TECHNOLOGIES: EVIDENCE FOR EFFECTIVENESS AND ETHICAL QUESTIONS

Dr. Matthew P. Buman, PhD

Wearable technologies offer unprecedented opportunities to advance research and improve health outcomes across a range of disciplines from epidemiology, to behavioral science, to healthcare delivery. The pace at which industry can develop, refine, and bring to market new technologies far outpaces that of traditional academic bioengineering groups which historically have driven the tools used by the research community. Leveraging consumer-focused wearable technologies (e.g., Fitbit) in biomedical and behavioral research offers important advantages and opportunities to more rapidly advance scientific discovery and improve population health. However, it also presents unique technical, scientific, and ethical challenges that must be navigated by the researcher throughout the research process. The purpose of this presentation is to describe the scope of research led by academic researchers and behavioral scientists leveraging Fitbit and related technologies with a specific focus on validation studies, observational and longitudinal studies, and population- and clinical-based intervention studies. The presenter will highlight ongoing NIH-funded clinical trials that seek to leverage Fitbit technologies to support behavior change interventions in two distinct populations: prediabetic US Veterans recruited from a primary care unit in the VA health care system and individuals with obstructive sleep apnea recruited from a sleep disorders clinic in a large hospital system. Lastly, we will discuss implications for using wearable technologies in research as it relates to critical research design decisions, need for interdisciplinary teams to address technical challenges, and ethical considerations that have unique implications for researchers, health care systems, and patients.

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Symposium 33B

FITABASE AND TRACKING CONSUMER HEALTH BEHAVIORS: ONE USE CASE WITH ETHICAL CAVEATS

Dr. Ernesto R. Ramirez, PhD, MS

Fitabase is a five-year old software development company that has supported over 450 research studies and digital health projects that make use of Fitbit wearable devices. Fitabase was founded in 2012 in order to meet the growing need from the academic and clinical research and health services community to easily use newer consumer devices for tracking health behaviors without investing in costly and time-intensive technical development and support. Our Fitabase platform is routinely used to remotely monitor participants, access near real-time data, and provide robust data export capabilities for researchers who are conducting independent data analysis. Our experience, through creating a lasting partnership with Fitbit Inc. and developing software tools that support behavioral health research community, has provided us with numerous insights into the methodological, technical, and ethical issues that arise when working with consumer digital health tools and their data.

A brief overview of the Fitabase platform will be given, paying particular attention to the authorization protocols that allow for the sharing of data across technical infrastructures. We will also discuss our terms of service and privacy policies as they pertain to data sharing and the storage and access rights of data we collect on behalf of our research customers, and how they were developed. Over the last five years we have numerous experiences working with a variety of academic and for-profit entities and will present examples of issues we have encountered that deal with protecting participant privacy, and how our data access and storage features are designed to reflect ethical and privacy principles. Specific emphasis will be placed on how our research customers make use of de-identification methods across the device, account, and data collection processes, and how these features and processes can be reflected in communication with institutional review boards. Lastly, we will provide examples, based on our experience, as to how commercial entities can work hand-in-hand with the research community to support innovative study designs and data gathering at scale.

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Symposium 33C

PRIVACY, TERMS, AND CONDITIONS: ETHICS AND DIGITAL HEALTH

Michelle De Mooy, BA, Government; MA, Strategic Communications

The Center for Democracy & Technology (CDT) is a nonprofit technology advocacy organization that champions global civil liberties and human rights online. The work of the Privacy and Data Project focuses on advancing individual dignity and autonomy in digital systems, through technical and policy levers.

In 2016, CDT released a report that detailed its collaboration with Fitbit to develop privacy-protective and ethical internal research procedures for wearable technology companies. Wearable sensor technology, in particular, has the potential to transform health care and our understanding of our own bodies and habits. The investigation and testing of these sensors in the commercial sector offer an unprecedented opportunity to leverage biometric data, both to improve individual health through the development of better products and to advance the public good through research. However, research with wearable sensor data must be done in a manner that is respectful of ethical considerations and consumer privacy. Not only will the processes that govern this research define the potential public good derived from wearables, they will encourage user trust in wearables and promote participation. Therefore, the research and development (R&D) teams at these companies are not just engines of innovation, but also have the potential to be an important part of our social infrastructure. R&D teams in wearable technology can and should also be laboratories of privacy and ethical research best practices. Some companies, such as Fitbit, leverage the talent and expertise on their teams to embed privacy into their technology.

In this session, will discuss the specific policies and procedures used by Fitbit's R&D team and the frameworks used by CDT to create recommendations on data security, privacy, and ethics for commercial health researchers. We'll also touch on how ethical frameworks can approach issues facing academic and commercial researchers today, such as data scraping and the mitigation of unintended bias in the creation of algorithms that deliver health-related content to users.

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Symposium 34

8:00 AM-9:15 AM

INNOVATIVE TECHNIQUES TO ENHANCE ENGAGEMENT AND RETENTION IN RCTS: MOVING TOWARDS EVIDENCE-BASED PROCEDURES

Danielle E. Jake-Schoffman, PhD¹, Roxana Farias, MPH², Tricia Leahey, PhD³, Susan D. Brown, PhD⁴, Monica L. Baskin, PhD⁵¹University of Massachusetts Medical School, Worcester, MA; ²Stanford University School of Medicine, Stanford, CA; ³University of Connecticut, Storrs, CT; ⁴Kaiser Permanente Northern California, Oakland, CA; ⁵University of Alabama at Birmingham, Birmingham, AL

Among the most challenging aspects of successfully administering a randomized behavioral trial are maintaining participant engagement in the intervention and retaining participants through follow-up assessment visits. A number of procedures are routinely used during trial enrollment in an effort to boost engagement and retention, such as in-depth screening visits, orientation sessions, behavioral contracts, and run-in periods. However, these procedures typically require large investments of staff time and trial resources, there is little data to describe the impact of the procedures on participant engagement and retention, and there is even less known about the mechanisms of impact by which the procedures improve trial quality. Additionally, concerns exist about whether adding new or complicated enrollment procedures to a trial protocol could limit the generalizability its results or compromise the diversity of the sample. Here, we present early data to demonstrate the impact of orientation sessions and run-in periods on a range of behavioral weight loss interventions. The first presenter will discuss an innovative approach to orientation sessions, the Methods-Motivational Interviewing (MMI) approach, originally designed as an in-person group-based orientation session, which has since been adapted to a variety of trial settings, participant populations, and delivery modes. The presenter will share data from an on-going trial where the MMI approach is implemented as an interactive webinar, in response to early differential engagement in the intervention. The second presenter will discuss another example of the implementation of the MMI approach, in a study of gestational weight gain among low income women. In this trial, the MMI approach is implemented as a conference phone call to accommodate the technology ownership of the target participants. Data from the on-going trial will be shared to describe the changes in trial enrollment, attendance, and retention before and after implementing the sessions. The third presenter will discuss the results of a preliminary test of the impact of the MMI approach on participants' research literacy about trial retention and trust in the research team before and after attending an in-person group-based orientation session. The fourth presenter will discuss data from a behavioral run-in period before a weight loss trial, to investigating if the run-in predicted participant treatment adherence during the trial. Finally, the discussant will provide a summary of the study findings and lead a conversation about the considerations for implementing these trial procedures, the potential implications for generalizability, and the next steps for generating evidence to support efficient and effective trial pre-enrollment procedures.

Symposium 34A

INCREASING RETENTION IN RCTS: THE METHODS-MOTIVATIONAL INTERVIEWING APPROACH TO ORIENTATION SESSIONS

Danielle E. Jake-Schoffman, PhD

Orientation sessions in randomized clinical trials serve primarily to communicate trial procedures to potential participants, while they could be used to involve participants in the research experience on a deeper level by engaging them in the scientific rationale of the trial design, research questions, and methods. This may also provide participants with a more comprehensive understanding of the commitment entailed in trial enrollment, thus enhancing retention, regardless of participants' own trial experience or degree of individual success. Our Methods-Motivational Interviewing (MMI) approach leverages interactive orientation sessions, held pre-randomization, to set clear expectations for participants (e.g., transparency about lengthy assessments), explain the scientific rationale for methodological procedures (e.g., randomization and impact of dropouts on scientific conclusions), diffuse ambivalence about research participation using motivational interviewing techniques (e.g., remaining neutral regarding participation), and make explicit two commitments (i.e., to self and trial methods). Originally delivered as in-person group-based sessions, the MMI approach has been adapted to a range of trial designs, settings, and participants. Here we describe innovative modifications to the approach to enhance the fit with trial needs, through pre-randomization webinars. These orientation session webinars were implemented in the Get Social weight loss trial, after early data showed differential participation. In a set of webinar slides, a research team member presents the orientation session, including a detailed description of trial expectations. Then, using motivational interviewing techniques, an interactive discussion is facilitated through the webinar chat function to elicit potential participants' views on the pros and cons of participating in both of the study conditions. The trial and data collection are ongoing. To date, and correcting a trend toward differential participation, the MMI approach is associated with a significant increase in participation (measured by % participation in 0 intervention sessions) in the control group (pre-implementation 28% vs. post-implementation 6%, difference: -22%, 95% CI: -39, -5; no difference in intervention group: pre-implementation 3% vs. post-implementation 3%, difference: 1%, 95% CI: -7.3, 8.6), thus. Further, retention significantly increased at the 6-month follow-up visit (pre-implementation 81% vs. post-implementation 97%, difference 16%, 95% CI: 5, 26). Practical tips for adapting and implementing the MMI approach in a variety of trial settings will be provided, such as considerations of differences between study conditions and potential session delivery methods. Future research directions such as the design of randomized experiments to test the MMI approach will be discussed.

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Symposium 34B

PARTICIPANTS' RESEARCH LITERACY ABOUT RETENTION AND TRUST IMPROVE AFTER ATTENDING INTERACTIVE ORIENTATION SESSIONS

Roxana Farias, MPH

Background: Participant research literacy is essential for informed participation in clinical trials. In prior work, we described a novel practical approach for improving participants' research literacy—interactive in-person group-based orientation sessions held prior to randomization. We designed these sessions in part to clearly explain the methodological rationale for trial procedures, such as completing all follow-up assessments, and speculated that transparency about methodology could increase participant trust of the research team even though trust is (purposely) not mentioned during the orientation sessions.

Objective: Here, we examined whether individuals increased their research literacy about the importance of trial retention and their trust in the research team after attending an in-person group-based orientation session.

Methods: The sample consisted of overweight/obese adults with elevated blood pressure potentially interested in participating in a 3-year behavioral weight-management intervention trial (n=233, 43.4% men, 41.2% Asian, 5.6% Black, 6.0% Latino, 0.9% Native Hawaiian, 40.8% White, and 5.6% Multi-Racial/Ethnic). Knowledge was assessed with a categorical question that asked about the effect of dropouts on the conclusions that an evaluation team could draw from a hypothetical program, i.e., if participants who were not successful did not come back to be measured, the evaluation team would (erroneously) conclude the program was more successful than it really was. Trust was assessed with a 5-point scale with response options (not at all, a little bit, moderately, quite a bit, extremely) from 1–5.

Results: Before the orientation session, only 61.8% of potential participants correctly answered the knowledge question. After the orientation session, 84.5% correctly answered, an absolute percentage increase of 22.7% [CI 16.4% to 29.1%], $t(232) = 7.0$, $p < .0001$, or 1 in 5 more individuals. Potential participants also trusted the research team more after the orientation session, a mean increase of 0.5 [CI 0.4 to 0.6 units] from 3.9 ± 0.8 to 4.4 ± 0.7 , $t(232) = 9.9$, $p < .0001$.

Conclusions: Promisingly, the orientation session improved participant research literacy and participant trust. Future trials could experimentally test whether similar sessions improve not only research literacy and trust, but also trial retention, especially among populations with less initial trust about research.

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Symposium 34C

CLINICAL TRIAL METHODOLOGY: ARE BEHAVIORAL RUN-INS EFFECTIVE?

Tricia Leahey, PhD

Background. Large-scale efficacy trials such as the Diabetes Prevention Program (DPP) have relied on behavioral run-ins to identify and enroll participants likely to adhere to study protocols. Behavioral run-ins involve the completion of an important and difficult task that will be required during treatment. In weight loss trials, run-ins typically involve self-monitoring diet and activity for up to 3 weeks. Oftentimes, a staff interview follows the behavioral task. During the interview, the staff member ascertains the participant's reaction to self-monitoring and explores any anticipated concerns regarding study involvement (e.g., time commitment, possible schedule change). Despite the use of behavioral run-ins in major efficacy trials (e.g., DPP, Look AHEAD), and that such procedures are resource intensive (staff time), to our knowledge, this is the first study to examine whether a behavioral run-in is indeed effective at predicting adherence in a health behavior change intervention.

Methods. Individuals interested in enrolling in a weight loss trial completed a behavioral run-in (1 week of monitoring diet and activity plus staff interview). Based on run-in data (number of monitoring days, qualitative interview data), research staff identified each participant as likely to be either a high, moderate, or low adherer. Those predicted to be high and moderate adherers were enrolled in the 12 month trial. Adherence was compared between the two groups.

Results. Among those enrolled (N=273, 75% female, 27% minority, 52 ± 6 years, $35 \pm 3 \text{ kg/m}^2$), N=223 were predicted to be high adherers and N=50 moderate adherers. High vs. moderate adherers did not differ on age, race, ethnicity, or socioeconomic status. However, they did differ on sex; men were more likely to be identified as likely high adherers than women ($p=.01$). Analyses examining whether behavioral run-in classifications predicted treatment adherence revealed significant effects. Participants expected to be high adherers based on their behavioral run-in did in fact attend more intervention sessions ($p<.001$) and complete more self-monitoring records during treatment ($p=.005$). They also lost more weight ($p=.03$). Adherence to the assessment protocol did not differ by group ($p=.70$).

Conclusion. This study is the first to provide evidence that behavioral run-ins, while resource intensive, are effective at identifying individuals likely to adhere to treatment protocols in randomized trials involving behavioral interventions.

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Symposium 34D

REMOTELY-DELIVERED ORIENTATION SESSIONS TO RETAIN PARTICIPANTS IN A PREGNANCY LIFESTYLE INTERVENTION: THE GLOW TRIAL

Dr. Susan D. Brown, PhD

Low retention in clinical trials undermines validity, wastes resources, disheartens staff, and may signal unmet participant expectations. Orientation sessions conducted before randomization, using motivational interviewing techniques, are one approach to clarify trial requirements, resolve ambivalence about participating, and build participants' commitment to the scientific premise. Remotely-delivered sessions could support broad dissemination of this approach in "hard to reach" populations, especially for telehealth intervention trials. We describe an orientation session (OS) protocol implemented mid-way through the "Gestational Weight Gain and Optimal Wellness" (GLOW) study, an ongoing weight management trial in an integrated healthcare delivery system. The trial compares usual care to a mainly telephone-based, 13-session lifestyle intervention among overweight and obese pregnant women (64% racial/ethnic minorities). Originally, potentially eligible women identified in electronic health records in early pregnancy received a recruitment letter and call, and completed a baseline clinic visit before randomization. Mid-way through the trial, we implemented an OS protocol between the recruitment call and baseline visit to better calibrate expectations and improve retention in the pregnancy intervention. Women participated in an OS via conference call, in small groups or individually, with written materials emailed in advance. A trial co-investigator or project manager facilitated discussion, e.g., eliciting pros and cons of random assignment, discussing commitments to clinic visits and intervention activities, and whether women could make time to participate. We compared retention in the intervention among 151 participants randomized before vs. after implementation of the OS protocol (pre-OS, $N = 78$ vs. post-OS, $N = 73$). We report descriptive results, pre- vs. post-OS, in the proportions completing zero sessions (2.6% vs. 0%), < 4 sessions (15.4% vs. 8.2%), < 8 sessions (16.7% vs. 11.0%), and all 13 sessions (80.8% vs. 82.2%; all p -values $\geq .16$). Interim findings suggest that remotely-delivered orientation sessions are feasible among pregnant women. We observed small absolute improvements in retention, especially in the beginning of a multi-session intervention. Improvements achieved with orientation sessions may be incremental, depending on the base rate in a given trial. Practical lessons learned and directions for future research will be discussed.

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Symposium 35

8:00 AM-9:15 AM

USER-CENTERED DESIGN IN BEHAVIORAL MEDICINE- METHODS FOR PRAGMATIC INTERVENTIONS

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Transitioning from efficacy to effectiveness trials remains to be a significant challenge in the behavioral field. Emerging theories suggest that critical intervention design flaws may be identified prior to implementation by applying user-centered design principles often employed in the engineering field. This is an emerging area of interest, particularly given the interest in digital behavior change interventions (DBCI's). In this symposium, we present how user-centered design principles may be applied using qualitative, mixed method, co-design, and agile processes. More specifically, we describe how these principles can be applied in both non-clinical and clinical settings, from early pilot studies to large scale digital healthcare delivery systems. Dr. Michelle Takemoto will first present the importance of user-centered qualitative research when using wearable devices and how perceived usefulness may influence intervention design, participant recruitment and compliance in non-clinical settings. Dr. Sarah Mullane will propose how to transform this qualitative input into quantitative output using a user-centered correlational matrix tool to accommodate different user personas, prioritize requirements and identify design flaws. The transition to larger scale user-centered practices in clinical settings will be provided by Dr. Rebecca Ellis, who will present the value of Co-design practice and iterative design to target the end-user that led to the development of a smart pillbox and smartphone app that together work to support medication management. Finally, Dr. Devin Mann will highlight the emerging success of the Ambulatory Product Research and Innovation Lab (APRIL); a joint research-operational IT-led initiative created to infuse user-centered design and agile development principles and practices into the building of innovative digital tools across the health system. The role of Chair will be fulfilled by Dr. Sarah Mullane to introduce the concept of user-centered design, the symposia content and each presenter. Questions and points of discussion will be encouraged by all members of the symposia panel.

Symposium 35A

EXPLORING USER PERSPECTIVES TOWARD WEARABLE DEVICES THROUGH FOCUS GROUPS TO DESIGN USER-CENTERED BEHAVIORAL INTERVENTIONS

Dr. Michelle L Takemoto, PhD

Background: Recent epidemiological evidence estimates people spend 7.7 hours per day sedentary. Wearable devices represent a novel strategy to target sedentary behavior (SB), but additional user research is needed to understand how devices can be used to change the behavior. Researchers must design digital health interventions grounded in an in-depth qualitative understanding of target end-users. Extracting and incorporating user perspectives can be facilitated by conducting focus groups.

Purpose: The purpose of the current study was to explore the perceived acceptability, usability and usefulness of wearable devices in changing SB through focus groups.

Methods: We conducted 4 focus groups with a total of 15 participants to discuss 7 different wearable devices with SB capabilities. Focus groups have often been used in both marketing and advertising to gather end-user feedback on products. During our focus groups, participants commented on the wearability, functionality, and feedback mechanism of each device. Participants were asked to vote on their 'least' and 'most' favorite devices as well as design and describe their ideal or "dream" wearable device.

Results: Analysis resulted in 14 codes that were grouped into themes. Three themes emerged from our data: 1) Features of the device; 2) Data the device collected; and 3) How data are displayed. Users concluded that current devices on the market lacked a specific focus on SB in terms of features, data and display, which limited the perceived usefulness of the devices in reducing SB.

Conclusions: Overall, users perceived wearable devices to be usable and acceptable; however, specificity of design and feedback (e.g., encouraging SB behavior change with SB specific feedback) is required to increase perceived usefulness and ultimately influence behavior. Given the high variability in desired features, feedback, and wear location associated with wearable devices, failure to consider the end-user perspective and perceived usefulness may impact intervention recruitment and compliance within behavioral research.

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Symposium 35B

THE ‘HOUSE OF QUALITY FOR BEHAVIORAL SCIENCE’—A USER-CENTERED TOOL TO DESIGN PRAGMATIC, BEHAVIORAL INTERVENTIONS

Miss Sarah L. Mullane, PhD

Purpose: Emerging theories suggest that critical intervention design flaws may be identified prior to implementation by applying user-centered design principles often employed in the engineering field. However, tools within behavioral science to facilitate this practice are limited.

Methods: We propose an adaptation of the Quality Function Deployment “House of Quality” (HOQ) correlation matrix tool currently used for user-centered design in the engineering field. We present a detailed description of the adapted tool - “House of Quality for Behavioral Science” which aims to balance researcher and participant needs. A use-case scenario within the trucking industry is provided to demonstrate the translation of qualitative inputs into quantitative outputs and initial design influences for user-centered health solutions.

Results: Completion of the relationship correlation matrix increased requirement ranking variance for the researcher ($\sigma^2 = 0.47$ to 7.19) and participant ($\sigma^2 = 0.56$ to 3.89) perspective. Four intervention design flaws were identified via the preliminary tool application; 1) light-intensity physical activity limit (≤ 30 min); 2) improvement of rest areas and parking; 3) additional outcomes needed (sleep and alertness) and; 4) negative response to an app based intervention.

Conclusions: Requirements elicitation and application of the adapted HOQ increased requirement variance and facilitated requirement prioritization (ranking). A correlational matrix tool such as the “House of Quality for Behavioral Science” may provide a structured user-centered design approach (complementary to existing frameworks) that translates qualitative input into quantitative outputs, balances researcher and participant needs and identifies design flaws for pragmatic behavioral intervention design.

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Symposium 35C

CO-DESIGNING MOBILE HEALTH TECHNOLOGY FOR MEDICATION MANAGEMENT: INVOLVING TARGET USERS IN THE DESIGN PROCESS

Rebecca J Bartlett Ellis, PhD, MSN, BSN, BSBM

Background: Adherence to antihypertensive medication treatment regimens can significantly reduce risks for morbidity and premature mortality in people with chronic disease. However, nonadherence remains a significant barrier. Mobile technologies offer potential solutions to support behaviors associated with non-adherence, given these technological solutions are adaptable to people’s lives. In this presentation, we describe use of co-design as a way to design adaptable solutions that are not only user-centered, but user-designed.

Methods: Co-design is a form of participatory design that engages people who are representative of the target end-user in the iterative design of a solution. To develop our intervention, InterACT™, our interdisciplinary research team worked with a 5-person co-design team over a 3-month period. Co-design activities were systematically employed and included 1.) describing existing states and 2.) designing ideal states and solutions, and then we field-tested solutions. Usability and concept acceptability testing were simultaneously conducted with end-users ($n=19$) in the clinic setting and feedback was shared with the team to co-design the next iteration of InterACT™.

Results: Design activities conducted with the co-design team helped to identify important design attributes for InterACT™. Design attributes were subsequently integrated into a final solution consisting of a smart pillbox and smartphone app that together work to support medication management.

Conclusion: Co-design is a user-guided approach to user-centered design. Co-design activities can be useful to identify workable solutions that are acceptable and adaptable for the target user and identify attributes for which expert researchers may be unaware – creating opportunity and challenge in this iterative process.

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Symposium 35D

INFUSING DESIGN THINKING INTO A HEALTH SYSTEM ONE DIGITAL INTERVENTION AT A TIME: THE AMBULATORY PRODUCT RESEARCH AND INNOVATION LAB (APRIL) AT NYU LANGONE HEALTH

Dr. Devin Mann, MD, MS

Purpose: To develop in-house capacity to support clinicians and researchers across the health system in developing digital technologies necessary to realize innovative ideas designed for scalable clinical implementation.

Methods: The Ambulatory Product Research and Innovation Lab (APRIL) at NYU Langone Health is a joint research-operational IT-led initiative created to infuse user-centered design (UCD) and agile development principles and practices into the building of innovative digital tools across the health system. APRIL leverages a cross functional team with expertise in design thinking, agile product development, user interaction design, rapid pilot testing and iteration, to shepherd research/clinical teams through all phases of digital development from discovery and ideation to prototyping and pilot testing. The team collaborates closely with the sponsoring healthcare delivery research team to generate digital tools that leverage the latest science and design principles to facilitate broad healthcare implementation.

Results: APRIL has two digital intervention development projects in its current portfolio. These digital development projects exemplify our effort to apply current “best practice” with regard to UCD and agile methodologies into digital innovation and user-centered design; developing capacity for building effective digital interventions hospital system-wide. To facilitate acculturation of agile, UCD approaches, substantial effort has been made to educate the collaborative teams on the process. Multiple design thinking workshops have been held to foster vision and strategy alignment as well as harmony in feature requirements and minimal viable products. Early wireframing, collaborative design sprints and other customizations to the agile UCD approach have been used to bridge the gap between team cultures in digital development and healthcare delivery research. This iterative approach to refining the agile UCD process to the local environment has fostered a pragmatic approach and swift progress towards pilot digital tool launches. Each project presents unique opportunities and challenges with respect to balancing APRIL’s adherence to agile development, high quality research and alignment with organizational, enterprise wide goals.

Conclusion: APRIL’s integration of agile, user-centered approaches with healthcare delivery research expertise represents an exciting laboratory environment for producing new digital products inherently positioned to disrupt healthcare delivery.

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Symposium 36

8:00 AM-9:15 AM

'ALL THE FEELS': COMPLEX QUESTIONS REGARDING THE LIMITS AND CONSTRUCT VALIDITY OF AFFECTIVE DETERMINANTS OF EXERCISE BEHAVIOR

Courtney J. Stevens, PhD¹, Arielle S. Gillman, MA², Austin S. Baldwin, PhD³, Jessica A. Emerson, MS⁴, David Williams, Ph.D.⁵¹Geisel School of Medicine at Dartmouth, Lebanon, NH; ²University of Colorado Boulder, Boulder, CO; ³Southern Methodist University, Dallas, TX; ⁴Brown University, East Providence, RI; ⁵Brown University School of Public Health, Providence, RI

The relationship between cardiorespiratory exercise engagement and improved health outcomes is well established, but only 49% of American adults meet the *minimum* recommendations for weekly exercise, and 25% of the US adult population is completely sedentary. Data collected from objective sources (e.g., pedometers, accelerometers) suggest rates of exercise participation are likely far lower still. In recent years, the extent to which affective factors may help to explain the uptake and maintenance of exercise behavior has garnered increased attention. Our symposium seeks to highlight recent findings that conflict with the established literature, define affect in different ways, and explore the validity of various definitions of affect used in exercise research. First, Gillman examines the relationship between *affective response* to exercise and future exercise behavior as a function of exercise training volume (intensity and duration). Contrary to preliminary findings in this area, she does not find differences in affective response to exercise across training volume conditions, and average affective response to exercise during a 16-week training period is not associated with exercise behavior at 6-months follow up. Gillman does, however, find significant positive associations between affective response to exercise and other theory-based psychosocial constructs (e.g., self-efficacy, attitudes, intentions). Next, Emerson explores the associations between *incidental affect*, assessed via ecological momentary assessment (EMA), and exercise behavior. She finds evidence supporting bidirectional, reciprocal relationships between incidental affect and exercise behavior such that greater positive incidental affect predicts more exercise engagement, and greater exercise engagement predicts more positive incidental affect. Baldwin presents data collected from two investigations, each assessing common variance in *affective processing* constructs and their influence on exercise behavior. His results show that there is considerable empirical overlap among conceptually similar affective processing variables, which raises important considerations about construct validity with respect to advancing theory and exercise behavior intervention development. Finally, Williams synthesizes the lessons learned from the studies presented in this symposium and posits directions for future research.

Symposium 36A

RESPONSES TO EXERCISE OF VARIED INTENSITY AND DURATION: RELATIONSHIPS AMONG AFFECT AND PREDICTORS OF FUTURE EXERCISE BEHAVIOR

Arielle S. Gillman, MA

In recent years, there has been increasing attention paid to the role that affective factors (feelings of pleasure and displeasure) may play in driving the uptake and maintenance of health behaviors, including exercise. Previous work has demonstrated that exercise-related affect is associated both with future physical activity engagement (Kwan & Bryan, 2010; Williams, Dunsiger, Jennings, & Marcus, 2012) and with individuals' overall attitudes, self-efficacy, and intentions about exercise behavior (Kwan & Bryan, 2010b), which inform future decisions to exercise. However, this previous work has only examined relationships between affect during a *single* bout of exercise and future exercise behavior and its correlates; thus, we do not know whether whether *changes* (i.e., improvements) in affect over time may predict these outcomes. In the current study, 271 women were recruited to participate in a 16-week supervised exercise intervention and were randomly assigned to both *intensity* of exercise (high versus low) and *duration* of the exercise bout (20 versus 40 minutes). Affective response was measured every ten minutes during a selected exercise bout at the 0-, 4-, 8-, and 16-week time points during the intervention. Six months after the intervention, participants reported on their post-intervention minutes of exercise behavior and psychosocial predictors of exercise behavior including intentions, attitudes, self-efficacy, and exercise identity. We used multilevel modeling to examine changes in affect over the course of the intervention as a function of training condition, and test relationships between exercise-related affect, psychosocial predictors of exercise behavior, and follow-up exercise behavior. We found that an individual's average affective response throughout the intervention was associated with intentions ($p = .04$), attitudes ($p = .007$), exercise identity ($p = .006$), and self-efficacy ($p = .04$) at the six-month follow-up, but not self-reported minutes of exercise. These relationships held when controlling for intervention condition. Across participants, affect did not change over the course of the intervention ($p = .49$), and individual changes in affect were not significantly associated with any of the follow-up outcomes. These findings suggest that future intervention work might benefit from examining strategies individuals can use to improve exercise-related affect.

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Symposium 36B

AFFECTIVE PROCESSING FACTORS IN EXERCISE: EXAMINING THE EMPIRICAL OVERLAP AMONG CONCEPTUALLY SIMILAR CONSTRUCTS

Austin S. Baldwin, PhD

Background: Evidence to date is clear that affective processing factors (e.g., affective attitudes, enjoyment, affective associations) are robust predictors of exercise (Rhodes et al., 2009). An important issue needing to be addressed is the extent to which these conceptually similar factors overlap empirically and are distinct from other constructs. In two recent studies, we addressed this issue using two different approaches.

Methods: In the first study, healthy young adults ($N = 69$) completed measures of affective processing variables (affective attitudes, affective associations) and then a moderate-intensity exercise bout during which we measured their affective response. We tested whether the variables predicted unique variance in affective response, a key determinant of exercise behavior. In the second study, we examined the construct validity of affective processing scales (enjoyment, affective attitudes, affective associations) using data from two large samples of adult participants ($N = 1,044$ and $N = 359$). We examined the scales' convergent validity to each other and their discriminant validity from exercise self-efficacy.

Results: In the first study, affective attitudes and affective associations both predicted affective response in univariate models ($Bs > .34$, $ps < .003$, but neither significantly predicted when paired in the same model ($Bs < .26$, $ps > .09$), suggesting they predict overlapping variance in affective response. In the second study, the strength of the convergent correlations suggested that scales of affective attitudes, affective associations, and enjoyment may be measuring the same construct ($rs = .65$ to $.85$). However, all the scales also had considerable construct validity limitations, including poor discriminant validity from exercise self-efficacy ($rs = .54$ to $.62$).

Conclusions: Findings from both studies indicate that there is substantial empirical overlap among conceptually similar affective processing variables in exercise behavior (affective attitudes, affective associations, enjoyment). Moreover, current measures of these constructs have significant construct validity limitations. Both sets of findings illustrate important limitations on future advances in theory and intervention on affective processes in exercise. Developing clearer understanding of the conceptual boundaries of the constructs and how best to measure them and intervene on them will be discussed.

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Symposium 36C

RECIPROCAL ASSOCIATIONS BETWEEN AFFECT AND EXERCISE USING ECOLOGICAL MOMENTARY ASSESSMENT

Ms. Jessica A. Emerson, MS

Prior research suggests that exercise can influence how people feel later on in the same day (i.e. incidental affect). A different question asks whether there are effects of how people feel throughout the day on whether or not they engage in exercise. The focus of the present study is to examine the likely reciprocal relationship between incidental affect and exercise behavior within the same day. Fifty-nine previously low-active (< 60 min/week), overweight (BMI: 25 – 39.9) adults (ages 18–65) participated in a six-month exercise promotion study. Using ecological momentary assessment, participants reported their exercise sessions, and incidental affective valence (feeling good/bad) was assessed using the 11-point Feeling Scale at random times throughout the day. We expected to find support for both directions of effects, with exercise predictive of greater positive incidental affect later in the day, and greater positive incidental affect predictive of subsequent exercise behavior later that day. We also tested the relative strength of each direction of effects. A cross-lagged autoregressive model showed that when participants felt more positive incidental affect earlier in the day they were more likely to exercise later on ($b = .58$, $p < .01$). Additionally, on days when participants exercised they reported greater positive incidental affect later on ($b = .26$, $p < .01$). The effects of incidental affect on exercise behavior were stronger than those of exercise on subsequent incidental affect ($t = 23.54$, $p < .01$). The findings support the reciprocal effects in both directions for incidental affect and exercise, and suggest that positive shifts in incidental affect may precede positive changes in exercise behavior.

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Symposium 37

8:00 AM-9:15 AM

FEASIBILITY BEFORE EFFICACY: DESIGNING AND CONDUCTING INFORMATIVE, FUNDABLE FEASIBILITY STUDIES

Lanay Mudd, PhD¹, Jennifer Huberty, PhD², Elena Salmoirago-Blotcher, MD, PhD³, Wendy Weber, ND, PhD, MPH⁴

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Novel behavioral interventions are increasingly being developed and tested for efficacy on a range of health outcomes in various populations. However, researchers often overlook the need for feasibility pilot work prior to proposing and enacting full-scale efficacy trials. When results from such trials show a certain intervention to be ineffective, it is often impossible to determine whether the intervention actually had a null effect, or whether the study failed due to inadequate methodology. This session will describe the process of intervention development and the uses/misuses of feasibility work. We will discuss ongoing and completed feasibility trials as practical examples, and describe NIH funding mechanisms that support feasibility pilot work. Dr. Mudd will set the stage with an overview of NIH policies related to clinical trial research, as well as specific funding opportunities meant to support feasibility work to help investigators collect much needed building blocks in preparation for the next step - the design of an efficacy trial. Dr. Huberty will provide an overview of her currently funded feasibility study that is developing an online yoga intervention for women after stillbirth. She will review results from her phase 1 qualitative work which helped to further refine her intervention for feasibility testing in phase 2. Dr. Salmoirago-Blotcher will review results from her recently completed feasibility trial of a tai chi intervention to overcome barriers to cardiac rehabilitation, and how these findings are informing the design of the next stage of her research. The session will conclude with a discussion of uses and misuses of feasibility pilot studies moderated by Dr. Weber, and time for Q&A with the attendees.

Symposium 37A

STUDY PROTOCOL AND PHASE ONE FINDINGS FOR A FEASIBILITY TRIAL OF AN ONLINE YOGA INTERVENTION FOR MOTHERS AFTER STILLBIRTH

Jennifer Huberty, PhD

Background: Stillbirth (in-utero fetal death ≥ 20 weeks gestation) is a major public health issue ($\approx 26,000$ pregnancies in the U.S.). Women who experience stillbirth, compared to women with live birth, have a nearly 7-fold increased risk of a positive screen for Post-Traumatic Stress Disorder (PTSD). Novel approaches targeting mental health are critical. Yoga is efficacious, safe, acceptable, and cost-effective for improving mental health in a variety of populations but has yet to be tested among mothers with PTSD symptoms after stillbirth.

Methods: We present Phase one of a three-year online yoga feasibility trial that entailed the development of an online-yoga prescription and interviews to identify cultural barriers to recruitment in non-Caucasian women (i.e., predominantly Hispanic and/or African American) who have experienced stillbirth ($N=5$); both informing Phase two. For the yoga prescription, 30 videos from the Udaya library (online yoga) were randomized to 10 women so that each video was completed three times (nine videos per woman). A two-item investigator developed Likert-scale was used to assess emotional regulation (ER) and self-compassion (SC) pre-post completion of each video. Beliefs and barriers were determined using phone interviews.

Results: The mean difference between pre-post ER and SC scores established the final online yoga prescription. Videos were not used if they had a negative mean difference or $\leq 10\%$ improvement on ER and SC assessments. In partnership with Udaya, the research team filmed eight 30-minute control videos and 12 30-minute intervention videos (for phase two). The final prescription had 37 (25 tested, 12 filmed) videos. Beliefs about yoga included stress relief, relaxation, feel good about body, calming, flexibility and many women felt that online would be more convenient. Perceived barriers to yoga included cost, no friends/family to do yoga with, lack of childcare, determination, location, and time. Recommendations for recruitment included send post cards, use social media, run newspaper ads, no flyers with pictures of children or pregnant women, flyers with pictures of minority women, grocery store or retail gift cards, epublications (essence.com, madamnoire.com), offer incentives that acknowledge/honor the child (pendant, donation in the name of).

Discussion: Findings from this study informed Phase two, the three-group randomized feasibility trial to determine the effectiveness of online yoga to improve PTSD symptoms.

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Symposium 37B

THE GENTLE REHAB STUDY: TAILORING TAI CHI TO THE NEEDS OF ACUTE CORONARY EVENTS SURVIVORS WHO DO NOT ATTEND CARDIAC REHABILITATION

Elena Salmoirago-Blotcher, MD, PhD

Background. Cardiac rehabilitation programs (CRP) reduce cardiovascular mortality in survivors of acute coronary events (ACE), but more than 70% of patients—in particular older, female, and physically deconditioned patients—decline participation in CRPs. Tai chi—a practice based on light/moderate aerobic exercise accompanied by meditative components—could overcome some of the existing barriers to CRP attendance in this population.

Methods. In preparation for a large efficacy trial, this study was designed to:

1) Develop a tai chi intervention tailored to the needs of ACE survivors declining CRP. This was accomplished by assembling a team of experts in CRP, exercise physiology, and tai chi and using a modified Delphi approach to adapt an existing tai chi intervention to the specific needs of this population;

2) Determine the feasibility, safety, acceptability, and adequate dose of the tailored tai chi intervention. ACE survivors declining CRP enrollment were randomized to a “LITE” (2 sessions/week for 12 weeks) or to a “PLUS” dose condition (3 sessions/week for 12 weeks, then maintenance classes for 12 additional weeks). Feasibility (retention and attendance rates), acceptability (quantitative and qualitative assessments), moderate-to-vigorous physical activity (MVPA, assessed via accelerometry), weight, and QOL (SF-8) were measured at baseline, 3-, 6-, and 9 months since baseline. Aerobic fitness (stress test) was assessed at baseline and after 3 months.

Results. Twenty-nine participants—13 PLUS, 16 LITE; average age 67.9 years (SD=10.3), 27% female, and 93% white—were enrolled in the study. Fifty percent of the study participants were diabetic, 75% had high cholesterol levels, more than 50% were obese, and 30% were smoking at the time of enrollment. Both tai chi doses were safe, feasible, and enjoyable. Compared to the LITE dose, the PLUS dose improved MVPA, weight, and QOL. No changes in aerobic fitness were observed in either condition. This presentation will discuss these results in detail, focusing in particular on ways in which these findings will guide next steps in this line of research and on challenges encountered during the study.

Conclusions. Tai chi is a feasible, enjoyable, and safe exercise option for ACE survivors who are unable or unwilling to attend traditional CRPs. If proven effective in larger studies, tai chi could be offered as an alternative exercise option within existing CRPs or within the context of community-based rehabilitation programs.

Symposium 38

8:00 AM-9:15 AM

STOP (SUMMER TIME OBESITY PREVENTION) ACCELERATED WEIGHT GAIN AND FITNESS LOSS AMONG YOUTH

Michael W. Beets, M.Ed., M.P.H., Ph.D.¹, Keith Brazendale, PhD¹, Jennette P. Moreno, PhD², Paul von Hippel, MStat, PhD³, Amy Bohnert, Ph.D.⁴

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Over the past three decades, mounting evidence shows that summer vacation, for many youth in the US, is a time of excessive weight gain and loss of fitness, contributing to increased prevalence of obesity among school age children. The first documented evidence of the accelerated weight gain phenomenon comes from a national cohort of kindergarteners that began in 1998. For fitness loss, the first evidence dates back to the early 1990s from a physical education intervention in elementary schools. Since then, a large and robust literature base comprised of multiple, independent, large-scale observational and intervention studies have demonstrated support for these initial findings. The prevention of accelerated summer weight gain represents an important opportunity to address the obesity epidemic among US children. However, the reasons why children and youth gain unhealthy amounts of weight and lose fitness during summer vacation remain unknown. This symposium will provide three perspectives on the negative health impact of summer vacation. The presentations will cover theoretical or conceptual frameworks for understanding this phenomenon and possible solutions for mitigating the unhealthy effects of summer. The first presentation will discuss the health inequity of summer vacation and propose the Health Gap Hypothesis which attempts to understand the disparities in summer weight gain/fitness loss among racial/ethnic minority groups and income status. The second presentation will discuss the role year round school calendars may play in the mitigation of the negative health impact of summer on both weight gain and fitness loss. From a circadian rhythms perspective, the final presentation will report tests of the disrupted behavioral rhythms hypothesis, assessing differences in children's behavioral rhythms during the school year and summer and their association with seasonal changes in BMI. The discussant will synthesize these presentations and provide their perspective on future steps towards understanding and ameliorating the negative health impact of summer.

Symposium 38A

SUMMER TIME OBESITY PREVENTION (STOP): THE HEALTH GAP HYPOTHESIS

Keith Brazendale, PhD

Education has a long and robust history of studies showing that the achievement gap in academic performance widens over summer vacation between children from low-income and middle-to-upper-income households, and between children from ethnic/minority backgrounds compared to their white non-Hispanic peers. Likewise, during the summer, children gain 3 to 5 times more weight than they do over the entire 9 month school year, and this accelerated weight gain is more pronounced in children from low-income ethnic/minority households. The author's hypothesize that disparities in overweight and obesity among low-income minority households is largely driven by a greater acceleration in weight gain occurring over the summer months. Referred to as the “Health Gap Hypothesis”, the author's will present data that shows support towards the notion that this “health gap” exists largely due to a lack of access to structured summer programming that regulates children's obesogenic behaviors (e.g., activity, sedentary time, diet, sleep). Several studies show a minimal increase or a decrease in body mass index during the school year. The authors speculate that this is largely due to the structure and presence of the school day itself. Over summer, children from high-income households continue to maintain a routine and/or structure to their day with greater access to structured summer programming. A recent report from the American Camping Association showed 80% of children attending traditional summer camps were from middle to upper income families. We believe this unequal access accounts for a widening of the “health gap” over the summer and across time, and that this widening is one of the primary reasons why rates of childhood overweight and obesity are significantly higher in children from low-income households and ethnic/minority backgrounds compared to their higher-income peers. The “Health Gap Hypothesis” can be used to help explain health disparities in weight status between children from high and low-income households. As a whole, summer represents a form of double jeopardy for children from low-income households where they are losing academic ability and exasperating health disparities.

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Symposium 38B

TESTS OF THE DISRUPTED BEHAVIORAL RHYTHMS HYPOTHESIS FOR ACCELERATED SUMMER WEIGHT GAIN

Dr. Jennette P. Moreno, PhD

Background: The school-summer paradigm offers an opportunity to explore school-summer differences in children's behavioral rhythms and their association with seasonal changes in BMI. In the absence of the environmental demands and cues associated with the school year, children's behavioral rhythms (e.g., sleep/wake patterns) may be less stable contributing to misalignment of endogenous circadian rhythms and weight gain. Specifically, during summer children may go to bed later, leading to later bedtime and altered sleep midpoint (a proxy for circadian timing). Later bedtimes may result in shortened total sleep duration due to failure to compensate with a wake time late enough to make up for the later bedtime.

Methods: A longitudinal observational study involving 119, 5–8 year olds was conducted during the 2016–2017 school year and summer. Sleep timing (phase delay and sleep midpoint) and sleep duration were assessed using Actigraph GT3x-BT monitors worn on the wrist of their non-dominant hand for 8 days during the fall semester and again during the summer when children were not in school. Actilife software, using the Sadeh algorithm, was used to identify sleep epochs. Differences in children's average bedtime, wake time, sleep midpoint, and sleep duration during the school year and summer were compared using repeated measures ANCOVAs, using BMI percentile as covariate. The effect size (ES) was assessed by Cohen's *d* and was interpreted as large, medium, or small, if *d* was greater than 0.8, between 0.5 and 0.8, or less than 0.2, respectively. Significance level was set at $p < 0.05$.

Results: Ninety-nine participants completed both the school year and summer actigraphy assessment (6.9 ± 85 years, 52% female, 34% overweight). During summer children on average went to bed later (1.8 times = 88min; 95%CI 74.23–102.63, $pd=1.27$) and demonstrated later mean sleep midpoint (29%=82 min, 95%CI 67.68–95.48, $pd=1.20$) compared to the school year. While children exhibited later wake times during summer (14%=75 min, 95%CI 60.13–89.33, $pd=1.05$), they failed to adequately compensate for their later bedtimes, resulting in shortened average sleep duration during summer (3%=15 min, 95%CI 6.20–21.20, $pd=0.39$).

Conclusions: During summer, children demonstrated significant changes in their sleep/wake patterns compared to the school year. Our findings provide preliminary support for the disrupted behavioral rhythms hypothesis for accelerated summer weight gain during early elementary school. Future analyses should examine associations between changes in children's behavioral rhythms and seasonal changes in BMI.

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Symposium 38C

DO YEAR-ROUND SCHOOL CALENDARS REDUCE OBESITY?

Paul von Hippel, MStat, PhD

BACKGROUND. Children gain body mass index (BMI) more quickly during summer vacation than during the school year. Year-round school calendars, which shorten the summer vacation while adding breaks to the rest of the year, are hypothesized to reduce BMI gain during summer, but may increase BMI gain during the rest of the year.

DATA. We use data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998–99, a nationally representative sample of US school children. Children's BMI was measured in the fall and spring of kindergarten and first grade. The data include 606 children in 30 year-round schools, who we compare to 2,107 children in 105 traditional nine-month schools that are in the same geographic areas, primarily in the western US. Our models control for child demographics.

METHOD. Using multilevel growth models, we compare the BMI growth of children in year-round schools and nine-month schools, during the summer and during the months of the traditional kindergarten and first grade school years.

RESULTS. During the summer, children in year-round schools lose BMI while demographically similar children in other schools gain BMI. But during the rest of the year, children in year-round schools gain BMI faster than other children. In total, over a 12-month period, children in year-round schools gain at least as much BMI as other children.

CONCLUSION. The results do not suggest that year-round schools reduce obesity.

Symposium 39

8:00 AM-9:15 AM

TRUST AND (MIS)INFORMATION IN THE ERA OF SOCIAL MEDIA: FROM THEORY TO PRACTICE

Anna Gaysynsky, MPH¹, Emily B. Peterson, PhD¹, Jeanine Guidry, Ph.D.², Emily Vraga, Ph.D.³, Wen-ying Sylvia Chou, PhD, MPH⁴

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Approximately two-thirds of American adults get at least some of their news from social media platforms, including Facebook, YouTube, and Twitter. At the same time, confidence in mass media has dropped to its lowest level in history, with less than half of Americans reporting that they trust mass media sources. Trust in other public institutions (such as the federal government) has also fallen below historical averages in recent years. These developments present a serious challenge to public health. As more people turn to social media for health information, and fewer rely on public institutions or mainstream media outlets for news, communicating evidence-based health information to the public and combatting the spread of misinformation is becoming increasingly difficult.

While it is widely recognized that social media has transformed the way individuals obtain information, the role of trust and source credibility in social media communication has received relatively little attention even though these factors may be important predictors, mediators, or outcomes of changing communication patterns. This symposium will explore trust and credibility in the context of information-sharing on social media in order to highlight the importance of these constructs, survey relevant theories and analytic approaches, and introduce opportunities to leverage this theoretical understanding to improve health communication practice.

The first presenter will provide an overview of the ways trust and credibility have been conceptualized in various theories and explore the unique characteristics of social media that increase the saliency of these constructs. The second presenter will describe several examples of health misinformation on social media, with a focus on misinformation sources, conspiracy theories, and distrust. The third presenter will discuss a number of studies that suggest potentially effective strategies for correcting misinformation shared on social media. The discussant will summarize the presentations and suggest implications for practice and future research.

Symposium 39A

‘TRUST’ IN COMMUNICATION THEORY: CURRENT APPLICATIONS AND THE ROLE OF SOCIAL MEDIA

Dr. Emily B. Peterson, PhD

In the era of social media, health-promoting messages are increasingly being challenged by myths, misinformation, and opinions. When faced with health (mis)information, perceptions of trust and source credibility greatly affect whether and how individuals evaluate, process, and act on these messages. There is growing evidence that levels of trust in traditional and expert sources of information – such as doctors, government agencies, large news organizations, and scientific bodies – are eroding among some segments of the American population. These changes may have implications for health communication efforts, including appropriate strategies for message dissemination and the correction of misinformation. Therefore, a critical review examining how trust is currently being conceptualized in behavioral and communication theories is urgently needed. In doing so, it is vital to explore both how trust is theorized (e.g., as an outcome or predictor variable) and the underlying mechanisms by which trust is thought to influence and be influenced by other constructs.

This presentation will first provide an overview of the ways trust has been defined, operationalized, and applied in leading health communication and behavior theories and highlight relevant research from other disciplines, such as political science and marketing. Trust and related concepts will be explored from a variety of perspectives, such as information processing (e.g., elaboration likelihood model), message effects (e.g., extended parallel process model), and behavioral prediction (e.g., theory of planned behavior). The presentation will synthesize the complex relationship between trust and health-related knowledge, attitudes, and behaviors, with trust inconsistently theorized as a predictor, mediator, moderator, and/or outcome variable.

The presentation will conclude by highlighting the importance of studying the influence of trust in the context of social media and discussing how the key characteristics of social media – such as source anonymity, rapid diffusion of information, Web site algorithms, and information silos— may require researchers to rethink how trust is understood in existing theories or to develop new theories to better explain the role of trust in the context of peer-to-peer information exchange. Throughout the presentation, gaps and areas for future research will be identified.

Symposium 39B

HEALTH MISINFORMATION ON SOCIAL MEDIA PLATFORMS: CONSPIRACIES, UNTRUSTWORTHY SOURCES, AND PANIC

Jeanine Guidry, Ph.D.

The volume of health information available on social media platforms has increased dramatically over the past decade. People increasingly search for health information online, the information they find is often incorrect, and they will frequently act on this erroneous information. In addition, it is often difficult to determine the level to which online sources can be trusted. Finally, expressed trust in public health institutions has eroded on social media. In this context, it is becoming increasingly important for practitioners to be aware of health-related conversations occurring on social media.

This presentation will provide an overview of several quantitative content analyses focused on health misinformation appearing on social media platforms such as Twitter, Instagram, and Pinterest. Mentions of perceived untrustworthy entities, conspiracy theories, and civil liberties in these posts and conversations will be specifically highlighted. The presentation will first explore the representation of tobacco alternatives such as e-cigarettes and hookah on Instagram and Pinterest. Recent studies show that commercial entities have taken over much of the conversation on these platforms, with the majority of posts originating with some sort of business, and nearly all posts presenting tobacco alternatives as healthy and safe, without mentioning possible negative effects.

Next, studies focused on the recent Ebola and Zika outbreaks will be discussed. These analyses showed the presence of conspiracy theories in the public discourse (e.g. those suggesting that governments are responsible for creating either of these diseases and/or for their entry into certain countries). Social media misinformation also played a significant role in promoting the panic surrounding the outbreaks, particularly in the case of Ebola.

Finally, while misinformation about vaccines has long been a public health concern, it has taken flight on social media. For example, studies have shown that on Pinterest, which has a largely female usership and is mostly thought of as a place to share recipes and decorating ideas, close to 75% of vaccine-focused posts have an anti-vaccine message. A recent study on the sources of vaccine misinformation on Pinterest also showed that two of the accounts that elicit the highest engagement are attributed to physicians.

The presentation will conclude by highlighting a common thread running through all these cases: the limited engagement of public health entities in these social media conversations.

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Symposium 39C

EMPOWERING CITIZENS AND ORGANIZATIONS TO CORRECT HEALTH MISINFORMATION ON SOCIAL MEDIA USING EXPERT SOURCES

Dr. Emily Vraga, Ph.D.

While the prevalence and spread of misinformation on social media is a pressing challenge in public health, social media platforms also offer unique opportunities to immediately correct misinformation when it is shared. This presentation will discuss a series of experimental studies that explore the potential for *observational correction* of health misinformation on social media, which occurs when people see misinformation shared on social media being corrected and, as a result, update their own attitudes to reflect a position supported by the best available evidence.

In all the studies presented, participants saw a social media user post an incorrect health claim about a controversial health issue, with a link to a news story supporting their incorrect claim, and then observed that misinformation being corrected. The results suggest that while observational correction can be effective, its success depends on the health topic and the source of the corrective information. Specifically, corrective efforts failed for a well-known and polarized issue (whether vaccines cause autism) but were effective for both an established health issue (whether GMO foods cause illness) and an emerging one (whether GMO mosquitos caused the Zika virus to spread). Both algorithmic corrections (e.g., the Facebook related stories function) and corrections provided by other users mitigated misperceptions among participants seeing the corrections, so long as users provided links to credible information to support their correction. In addition, a single response from the CDC to misinformation about the Zika virus on Twitter was effective in mitigating misperceptions about the causes of the pandemic, without harming the perceived credibility of the CDC. Across studies, the effects of the corrective information were stronger among subjects who were originally misinformed about the health topic, suggesting this approach may reach those individuals in greatest need of correct information.

This research suggests that personal connections are not necessary for correction to occur on social media when expert sources can be referenced. Government agencies, fact-checking websites, and news articles appear to be trusted sources for corrections. Public health agencies and officials should create credible and easily shared corrective information on controversial health topics, and may also consider monitoring social media feeds for misinformation to offer corrections in real time.

Symposium 40

8:00 AM-9:15 AM

EXTENDING THE REACH OF LONGITUDINAL STIGMA RESEARCH TO ADVANCE HIV TREATMENT AND CARE

Valerie A. Earnshaw, PhD¹, Gregory Greenwood, Maryland², Lisa A. Eaton, PhD³, Christopher G. Kemp, MPH PhD⁴

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Despite biomedical advances, stigma continues to be a critical barrier to HIV treatment and care. Research evidence suggests that stigma undermines engagement in HIV care, uptake of evidence-based HIV treatment including Antiretroviral Therapy (ART), and physical health outcomes including CD4 count and viral load among people living with HIV (PLWH). Longitudinal research that investigates which stigma mechanisms (e.g., internalized, experienced, and/or anticipated) relate to HIV treatment and care outcomes, as well as the pathways whereby stigma relates to these outcomes, is needed to inform targeted interventions to improve the wellbeing of PLWH. Additionally, strategies to extend the reach of this research to policymakers, government agencies, community organizations, healthcare practitioners, and other sectors are needed to develop, implement, and sustain these interventions. This symposium showcases three cutting-edge research studies to foster greater understanding of associations between stigma and HIV treatment and care, and identify strategies to extend the reach of this research to key audiences. Studies focus on diverse populations from the United States (US) and South Africa, including newly-diagnosed Black men who have sex with men in the Southern US, African American women living with HIV in the Southern and Mid-Western US, and people who have been diagnosed with HIV but have not initiated ART in South Africa. They examine associations between different HIV stigma mechanisms and key outcomes, including engagement in healthcare services, ART utilization, and viral load. Moreover, they explore the roles of several mediating mechanisms in these associations, such as social support and various forms of coping. All studies draw on longitudinal data and examine stigma during critical time periods for HIV treatment and care, such as pre- to post-HIV diagnosis. Discussion will be led by a Program Officer in the HIV Prevention and Care Continuum, Co-Morbidities, and Translational Research Branch at NIMH, and focus on strategies to extend the reach of research on stigma and HIV treatment and care to policymakers, government agencies, community organizations, healthcare practitioners, and other sectors to improve efforts to treat HIV.

Symposium 40A

INTERNALIZED STIGMA AND VIRAL LOAD: A LONGITUDINAL EXPLORATION OF MEDIATING MECHANISMS IN SOUTH AFRICA

Dr. Valerie A. Earnshaw, PhD

Research suggests that internalized HIV stigma is associated with less engagement in HIV-related health behaviors, including non-utilization of antiretroviral therapy (ART), among people living with HIV (PLWH). ART non-utilization can lead viral load to be unsuppressed, which undermines the health of PLWH and increases risk of HIV transmission to others. It has been hypothesized that coping may play a role in associations between internalized stigma and health behaviors and outcomes. Yet, these processes remain understudied, including the specific forms of coping that may mediate these associations. Research that uses longitudinal data and differentiates between forms of coping may inform efforts to address stigma, improve coping, and ultimately enhance HIV treatment and prevention efforts. The current study draws on data collected from 414 PLWH in South Africa between July 2014 and July 2015. Adult PLWH were eligible to participate if they were eligible for ART, but had not yet initiated ART, and were not pregnant. Self-report data, including internalized stigma, avoidant coping (denying and distracting oneself from stressors), and substance use coping (using drugs and alcohol in response to stressors), were collected from participants at baseline and three months. Medical data, including ART initiation and viral load, were collected from the National Health Laboratory Service database at six and nine months. Path analyses were conducted using Mplus to test for longitudinal mediation. The final model was a good fit for the data [$\chi^2(66)=77.06$, $p=0.17$; RMSEA=0.02]. Results suggest that internalized stigma at baseline was associated with avoidant coping at three months. Avoidant coping at three months was associated with lack of ART initiation at six months which was in turn associated with viral load non-suppression at nine months. Significant indirect effects were observed between internalized stigma with lack of ART initiation and unsuppressed viral load via the mediator of avoidant coping. Substance use coping was associated with unsuppressed viral load, but did not mediate associations between internalized stigma and viral load. Analyses highlight the role of avoidant coping in associations between internalized HIV stigma and behavioral and physical health outcomes among PLWH. Intervention strategies are needed to address internalized stigma and avoidant coping to enhance HIV treatment and prevention efforts.

Symposium 40B

A LONGITUDINAL STUDY OF HEALTH RELATED STIGMA AMONG BLACK MEN WHO HAVE SEX WITH MEN NEWLY DIAGNOSED WITH HIV/STI

Dr. Lisa A. Eaton, PhD

Since the beginning of the HIV epidemic in the US, stigma has stymied prevention and treatment efforts. In this time, considerable attention has been focused on the need to address stigma, but limited work has been conducted on understanding the intricacies of stigma or in stigma intervention development. For example, it is known that stigma acts as a barrier to health care engagement, but it is unclear how the type, source, or strength of stigma affects this relationship. The US HIV epidemic is elevated among marginalized populations, in particular, among Black men who have sex with men (BMSM). It is estimated that by age 40, with current transmission rates, 60% of BMSM could test HIV positive (Matthews, 2016). Linkage and engagement in health care provides BMSM with effective options for HIV prevention (e.g., STI testing/treatment, HIV pre-exposure prophylaxis, sexual risk reduction programs), but our model of health care does not adequately address stigma, and therefore, many BMSM remain without care. For the current study, in order to understand how experiences of stigma are related to health care engagement, we assessed multiple forms of stigma, both pre and post HIV/STI diagnosis, in a year-long, longitudinal study among BMSM (N=151) residing in and around the Atlanta metro area (data collected 2014–2016). Earnshaw and Chaudoir's (2009) HIV Stigma Framework guided the assessment approach and included investigating pre diagnosis levels of HIV/STI prejudice, stereotypes, and discrimination, and post-diagnosis levels of enacted, anticipated and internalized stigmas. Fifty participants were newly diagnosed with HIV, and 101 were newly diagnosed with STI. Higher levels of both enacted ($M=2.16$, $SD=2.28/M=1.78$, $SD=2.10$, $t(1451)=3.25$, $p<.001$) and anticipated ($M=2.24$, $SD=2.50/M=1.78$, $SD=2.34$, $t(1451)=3.57$, $p<.001$) stigmas were associated with a greater likelihood of not linking and engaging in health care during the year post diagnosis. Internalized stigma, however, was unrelated to linkage and engagement in care ($M=2.22$, $SD=.83/M=2.17$, $SD=.79$, $t(1451)=1.14$, $p>.05$). Further, pre-diagnosis levels of prejudice towards people with HIV/STI predicted higher levels of post-diagnosis enacted stigma ($b=0.37$, $SE=0.14$, $p<.05$), anticipated stigma ($b=0.30$, $SE=0.13$, $p<.01$), and internalized stigma ($b=0.17$, $SE=0.06$, $p<.01$). Findings from this study are the first of their kind and provide a clearer understanding of how stigma unfolds during a critical time for HIV/STI testing and treatment. Outcomes can be used to improve the tailoring of stigma intervention work, and therefore, health care access and HIV/STI prevention among BMSM.

Symposium 40C

STIGMA, SOCIAL SUPPORT, AND SUBSEQUENT VIRAL LOAD AMONG AFRICAN AMERICAN WOMEN LIVING WITH HIV: AN EXPLORATORY LONGITUDINAL MEDIATION ANALYSIS

Mr. Christopher G. Kemp, MPH PhDc

STUDY OBJECTIVES: African American women are over-represented among women living with HIV in the United States. They are also less likely than other women to engage in and be adherent to antiretroviral therapy and may experience relatively poor HIV-related health outcomes. HIV stigma can be a barrier to treatment adherence, and social support may reduce the burden of HIV stigma. We explored longitudinal mediation of associations between HIV stigma and HIV RNA levels (viral load [VL]) by social support, among African American women receiving treatment for HIV.

METHODS: We used longitudinal data from a randomized controlled trial of an intervention to reduce HIV stigma among African American women in HIV care. We collected self-reported data at baseline, post-intervention, and 6, 8, 10, and 14 months, from May 2013 to December 2016. We extracted VL data from medical records. Primary outcomes were the log of mean VLs for each participant over the period following each timepoint until the next timepoint and whether participants were virally suppressed (VS, all VLs under 200 copies/ml) during the same period. We longitudinal mixed-effect models to explore whether HIV stigma and social support were associated with subsequent log mean VLs, probability of VS, or probability of transition from non-VS to VS. We used longitudinal causal mediation analysis to explore whether associations between stigma and VL were mediated by social support. We adjusted for trial arm, time, and their interaction, alongside confounders.

RESULTS: We analyzed data from 224 participants. At baseline, mean HIV stigma was 32.0 (standard deviation [SD]: 12.0, range: 14–70), mean internal stigma was 13.3 (SD: 6.2, range: 6–30), mean external stigma was 11.2 (SD: 5.7, range: 6–30), and mean social support was 30.9 (SD: 12.2, range: 0–44). Mean of log mean VLs was 4.4 (SD: 2.4), and 79.0% had VS. Higher HIV stigma levels ($p=0.041$) and lower social support levels ($p=0.028$) were associated with higher subsequent log mean VL levels. Higher external stigma levels ($p=0.048$) were associated with reduced probability of subsequent VS. Increased external stigma ($p=0.022$) and decreased social support ($p=0.025$) over time were associated with subsequent increases in log mean VL levels. Increased external stigma was associated with reduced probability of subsequent transition from non-VS to VS ($p=0.027$). Social support mediated 26.3% of the association between stigma and log mean VL (average causal mediation effect [ACME]=0.12, $p=0.028$).

DISCUSSION: This exploratory longitudinal analysis suggests that HIV stigma and social support may predict VL outcomes among African American women in primary HIV care. Ongoing external stigma may hinder the transition from non-VS to VS. Stigma appears to operate through social support and other pathways. To improve HIV outcomes in this population, interventions should leverage social support and mitigate stigma.

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Symposium 41

8:00 AM-9:15 AM

OPTIMIZING PATIENT-CENTERED PSYCHOSOCIAL ONCOLOGY IN DIVERSE PATIENTS: MOVING FROM IDENTIFICATION TO INTERVENTION

Betina Yanez, Ph.D.¹, Patricia I. Moreno, Ph.D.¹, Laura C. Bouchard, Ph.D.², Elizabeth L. Addington, PhD¹, Rina S. Fox, Ph.D., M.P.H.¹, Frank Penedo, PhD²

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Patient-centered approaches in oncology are increasingly important to both identifying unmet needs and concerns of diverse oncology patients and survivors as well as the health-related quality of life (HRQoL) of diverse patients. Furthermore, engaging a range of key stakeholders to identify the unmet needs among patients is crucial to the development of tailored and efficacious interventions. For example, the recent movement toward precision medicine presents a unique opportunity to guide treatment selection and delivery based on the patients' individual genomic profiles, yet little research has investigated patients' needs, expectations, and concerns throughout this process. As another example, given the well-documented HRQoL disparities among African Americans and Hispanics/Latinos following a cancer diagnosis, more research is needed to elucidate the specific needs of underserved patient populations and inform the development of culturally-sensitive interventions and community-based approaches that improve HRQoL among individuals diagnosed with cancer. However, few studies have specifically focused on patient-centered approaches to optimizing outcomes among diverse, underrepresented cancer patients. In this symposium, speakers will present findings from two observational studies that identify unmet needs in understudied cancer populations and two interventions aimed at improving the HRQoL in racially/ethnically diverse cancer patients. The first speaker will present data on the prevalence and severity of unmet supportive care needs among Hispanic/Latino cancer survivors (N = 288) and examine the association between unmet supportive care needs on both symptom burden and satisfaction with cancer care. The second speaker will present findings from a qualitative study (N= 28) aimed at identifying the educational needs, concerns, and expectations of patients and other stakeholders (e.g., oncologists, nurses) involved in the delivery and receipt of genomic tumor sequencing to inform treatment-related decision making among patients with advanced cancers. The third speaker will share findings from a randomized web-based cognitive behavioral stress management trial to improve HRQoL among a diverse sample of men (N= 191) with advanced prostate cancer. The fourth speaker will present data on a longitudinal community-based trial of yoga for Hispanics/Latinas (N = 39) diagnosed with breast cancer. Finally, the discussant will reflect on some of the strengths of patient-centered research in oncology, as well as lessons learned from these studies and future directions.

Symposium 41A

UNMET SUPPORTIVE CARE NEEDS IN LATINO CANCER SURVIVORS: PREVALENCE, SEVERITY, AND ASSOCIATIONS WITH SYMPTOM BURDEN AND SATISFACTION WITH CANCER CARE

Dr. Patricia I. Moreno, Ph.D.

Quality of life disparities among Latino cancer survivors are well-documented, however no previous research has characterized unmet supportive care needs in this population. The aim of this study was to elucidate the prevalence and severity of unmet supportive care needs in Latino cancer survivors and examine the association between unmet supportive care needs and both symptom burden and satisfaction with cancer care. Latinos who had completed primary treatment for breast, prostate, or colorectal cancer (N = 288) completed questionnaires as part of an NCI-funded project. Supportive care needs were assessed in five domains: psychological needs (PSY), health system & information needs (HSI), patient care & support needs (PCS), physical & daily living needs (PDL), and sexuality needs (SXN). Our unique sample was primarily foreign-born, Spanish-speaking, had a high school education or less and an annual household income below \$50,000, and reported greater unmet supportive needs compared to previously published norms in non-Hispanic white samples. Across the three cancer types, the two most common unmet needs were in the PSY domain: fears of recurrence (32.6%) and concern for close others (31.3%). However, there was significant variability in unmet supportive care needs by cancer type. The three most prevalent unmet needs among prostate cancer survivors were in the SXN domain, whereas the three most common unmet needs among breast and colorectal survivors were in the PSY and PDL domains. Factors associated with greater unmet needs included more recent cancer diagnosis (OR .98 [.96-.99]), younger age (OR .96-.97 [.93-.99]), female gender (OR 2.53-3.75 [1.53-7.36]), and being single (OR 1.82 [1.11-2.97]). Breast cancer survivors reported greater unmet needs than both prostate and colorectal cancer survivors (OR 2.33-5.86 [1.27-14.01]). Unmet needs were significantly associated with lower satisfaction with cancer care (HSI: B=-3.81, SE=1.18; PCS: B=-3.57, SE=1.47; PDL: B=-3.65, SE=1.46; SXN: B=-2.05, SE=1.24) and greater cancer-specific symptom burden in both breast (PSY: B=-8.30, SE=1.33; HSI: B=-6.36, SE=1.39; PCS: B=-4.20, SE=1.45; PDL: B=-4.18, SE=1.44; SXN: B=-6.24, SE=1.54) and prostate (PSY: B=-6.01, SE=2.02; HSI: B=-6.75, SE=2.12; SXN: B=-8.13, SE=1.67) cancer survivors. Findings document elevations in unmet supportive care needs in Latino cancer survivors and can inform targets of intervention in efforts to improve quality of life and reduce disparities among Latino cancer survivors.

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Symposium 41B

ADVANCED CANCER PATIENTS' AND STAKEHOLDERS' ATTITUDES TOWARD CANCER GENOME SEQUENCING TO GUIDE TREATMENT: A QUALITATIVE STUDY

Laura C. Bouchard, Ph.D.

Objective: Precision oncology involves guiding cancer treatments based on an individual tumor's sequence of genomic targets. Using cancer genome sequencing may be more effective for treating cancer; however, results can be complex, difficult to communicate, and may not provide definitive or effective treatment options. This qualitative phenomenological study aimed to assess patients' and providers' experiences and expectations with cancer genome sequencing to identify their informational and supportive needs.

Method: Patients with advanced cancer who underwent cancer genome sequencing (n=16) and providers (n=12) in a precision oncology clinic participated in semi-structured interviews assessing their educational needs, concerns, and expectations for cancer genome sequencing. The one-hour interviews were audio-recorded and transcribed. Two independent coders identified patient and provider themes.

Results: Patients were mostly female (56%) with a mean age of 57.6 years ($SD=15.1$). Cancer diagnoses were primarily breast (38%) and most had metastatic disease (63%). Providers were oncologists (58%), oncology nurse practitioners (25%) and oncology fellows (17%). Among non-fellows, mean years of experience in oncology was 7.4 ($SD=5.6$; range 2.5–19.0 years) and mean years referring patients to cancer genome sequencing was 2.9 ($SD=1.5$; range 1.0–6.0 years). During the individual interviews, all patients and providers discussed the limited information patients have about cancer genome sequencing, as well as the associated financial challenges. All patients and most providers (75%) discussed challenges regarding patient-provider communication, and all patients and most providers (67%) discussed healthcare system challenges. Most patients (63%) and providers (67%) discussed the emotional concerns patients experience during cancer genome sequencing. Specific to providers, all discussed the goals and strategies of using cancer genome sequencing to inform cancer treatment decision-making. Finally, most providers (67%) discussed their own barriers to providing cancer genome sequencing services to their patients.

Conclusion: Patients with advanced cancer and oncology providers identified unique challenges related to cancer genome sequencing. Identifying educational and supportive needs is a critical step in developing tools to enhance patient and provider experiences and expectations in cancer genome sequencing.

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Symposium 41C

RESULTS OF COMMUNITY-BASED YOGA PLUS UNSTRUCTURED VS. FACILITATOR-GUIDED GROUP DIALOGUE WITH LATINA BREAST CANCER SURVIVORS

Dr. Elizabeth L. Addington, PhD

Introduction: Although many studies demonstrate efficacy of yoga for improving adjustment and decreasing symptom burden among women with breast cancer, most have been conducted with primarily white samples in the academic setting. Research is needed to examine community-based adaptations of yoga for Latinas with cancer, who report higher distress, more social withdrawal, and poorer quality of life than other racial/ethnic groups of cancer survivors.

Methods: Overweight and obese Spanish-speaking female breast cancer survivors were enrolled in a 12-week, non-randomized, community-based yoga pilot study that included 30 minutes for a healthy snack and discussion at the end of each class. For participants in two courses (n=22), this time was devoted to unstructured, peer dialogue and social connection. During two separate courses (n=17), group discussions at sessions 3, 6, 9 and 12 were instructor-facilitated instead, focusing on participant experiences with yoga and its effects on their daily life. We conducted repeated measures ANOVAs, controlling for baseline expectancy, to test within- and between-group differences in patient-reported outcomes (PROMIS) between baseline, 12, and 24 weeks.

Results: Within the group of participants who attended Spanish language yoga classes followed by unstructured group dialogue, depression decreased significantly from baseline to week 12 and from week 12 to week 24. Participants who attended the courses with facilitator-guided group dialogue also demonstrated statistically significant within-group decreases in depression at week 12 and week 24, as well as statistically significant within-group decreases in pain interference and fatigue at week 12. When examining between-group differences, results for satisfaction with social roles and positive affect/wellbeing at week 12 favored the facilitator-guided groups.

Conclusion: This study provides preliminary evidence that both unstructured and facilitator-guided group discussion may benefit Spanish-speaking breast cancer survivors participating in community-based yoga. However, compared with peer-to-peer discussion, structured group dialogue led by the interventionist may be especially effective for improving psychosocial outcomes and decreasing symptoms. Future studies using a randomized design are needed to further explore these findings.

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Symposium 41D

EFFECTS OF A TECHNOLOGY-ASSISTED CBT-BASED INTERVENTION ON THE PSYCHOSOCIAL FUNCTIONING OF MEN WITH ADVANCED PROSTATE CANCER

Rina S. Fox, Ph.D., M.P.H.

Cognitive behavioral therapy-based stress- and self-management interventions (e.g., Cognitive Behavioral Stress Management; CBSM) have been shown to mitigate the physical and psychological symptoms of localized prostate cancer. However, traditional psychosocial interventions require patients to attend in-person sessions, which can present challenges for advanced prostate cancer (APC) patients who may experience greater functional limitations and heightened symptom burden. Treatments delivered via the Internet can remove barriers associated with travel, and enable computerized adaptive testing (CAT) approaches, such as those available through the Patient-Reported Outcomes Measurement Information System (PROMIS), to repeatedly assess psychosocial functioning while minimizing response burden. This study evaluated the impact of a technological adaptation of CBSM on symptoms of depression, anxiety, fatigue, pain interference, and physical functioning among a diverse group of men with APC undergoing hormone therapy (HT). Patients were randomized to participate in a CBSM group intervention ($n=95$) or a health promotion (HP) attention-matched control condition ($n=96$). Participants attended all sessions with trained facilitators via video conferencing using tablet computers, and completed PROMIS CATs weekly from their homes during the 10-week intervention period. Multilevel modeling demonstrated no significant group-by-time interactions from week 1 to week 10 for any of the five psychosocial domains explored after controlling for sociodemographic (i.e., age, race, ethnicity, marital status, income) and medical (i.e., comorbidities, metastatic status, history of prostatectomy, chemotherapy within the prior six months, radiation within the prior six months, years since diagnosis) variables. However, despite the lack of omnibus interaction effects, simple effects demonstrated significant decreases in PROMIS Anxiety scores from week 1 to week 10 for both the CBSM (mean difference [ΔM] = -3.38; $p=.01$) and HP groups ($\Delta M = -3.09$; $p=.01$), as well as a significant decrease in PROMIS Depression scores from week 1 to week 10 for the CBSM group ($\Delta M = -2.69$; $p=.04$), but not the HP group ($\Delta M = -1.88$, $p=.11$). Results demonstrated the feasibility and benefits of utilizing PROMIS CATs to repeatedly assess psychosocial functioning from afar, and indicated that technology-administered CBSM may be an effective strategy to decrease psychosocial distress among men with APC undergoing HT.

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Symposium 42

8:00 AM-9:15 AM

USING TECHNOLOGY TO INFORM AND ENHANCE CLINICAL PRACTICE TO IMPROVE BARIATRIC SURGERY OUTCOMES

Stephanie P. Goldstein, M.S.¹, J. Graham Thomas, PhD², Lauren E. Bradley, PhD³, Diana Thomas, Ph.D.⁴, Dale S. Bond, PhD⁵

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Bariatric surgery produces large, sustained weight losses that result in improved health and quality of life for many patients with severe obesity. However, substantial variability in outcomes has been observed with up to one-quarter of patients experiencing sub-optimal weight loss and many individuals experiencing weight regain as early as 18 months post-operatively (post-op). The recent rise of powerful web-based, mobile, and statistical technologies shows promise for enhancing the assessment and treatment of behavioral, psychosocial, and surgical factors related to poor post-op outcomes. The overarching goals of this symposium are to (1) identify the primary barriers to care among bariatric surgery patients, (2) describe the ways in which specific technologies can be harnessed to address identified barriers, and (3) present preliminary findings on the described technological approaches. The first speaker will present on the development and implementation of a multi-modal assessment platform that utilizes ecological momentary assessment as well as passive physical activity and eating sensors. Initial data regarding which behavioral and psychosocial risk factors contribute to outcomes will be presented. Ways in which these data can influence clinical post-op guidelines will be explored. The second speaker will present on the effectiveness of a remotely delivered, acceptance-based behavioral intervention for targeting post-op weight regain. The utility of a web-based intervention for this population, as well as the importance of addressing psychological barriers to post-op adherence will be discussed. The last speaker will discuss the development of a machine learning system that utilizes pre-operative factors (e.g., demographics, medical diagnoses, eating behaviors and physical activity) to choose the optimal type of bariatric surgery and lifestyle plan for each patient. The way in which the system individually tailors recommendations based on a variety of pre-operative factors will be demonstrated. Together, these presentations will highlight the ways in which novel applications of technology can inform clinical practice and extend the reach of effective treatment and assessment in this population. Methods described during this symposium are especially relevant as they can be generalized to enhance clinical care for other types of health behavior concerns.

Symposium 42A

WIRELESS SENSOR INTEGRATION TO IMPROVE ECOLOGICAL MOMENTARY ASSESSMENT OF BARIATRIC SURGERY PATIENTS BEHAVIORS & EXPERIENCES

Dr. J. Graham Thomas, PhD

The methods used historically to study weight-related behaviors and experiences (e.g., retrospective self-report questionnaires, clinical interviews, paper diaries) are subject to forgetting, bias introduced by heuristics used to counter forgetting, poor awareness of behaviors/experiences, reliance on patients to report on associations between behaviors and/or experiences that may fall outside of their awareness. Ecological Momentary Assessment (EMA) counters these challenges by capitalizing on mobile technology to solicit self-report of behaviors, experiences, and environmental conditions several times per day over several days. However, challenges remain related to the reliance on self-report and the difficulty of collecting information on discrete events such as eating episodes and bouts of physical activity, near to the time of their occurrence, without overburdening participants. This presentation describes the application of mobile sensor technology in an ongoing study, "Ecological Momentary Assessment of Behavioral and Psychosocial Predictors of Weight Loss Following Bariatric Surgery" (R01 DK108579) to reduce reliance on self-report of key eating and physical activity behaviors, and to use objective data to trigger self-report of behaviors as they occur. The presentation will begin with overview of study aims, which involve identifying behavioral, psychosocial, and environmental predictors of success and risk after bariatric surgery. Next, the process of developing the technology will be reviewed, with an emphasis on how the technology was designed to meet the study aims, how challenges in technical development were addressed, and the strengths and weaknesses of the resulting platform. Two methods for incentivizing adherence to the measurement protocol will be compared and contrasted (i.e., incentivizing for maintaining a level of compliance above a minimum threshold versus incentivizing per response). Examples of data and findings resulting from the study will then be reviewed, with an emphasis on appropriate analytic approaches and the unique learnings that can be obtained from such data. The presentation will conclude with a discussion of how the learnings can be applied in clinical contexts, and future directions for further improving EMA platforms involving integrated sensors for objective monitoring.

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Symposium 42B

EVALUATING THE UTILITY OF REMOTELY-DELIVERED BEHAVIORAL INTERVENTIONS TARGETING POST-BARIATRIC SURGERY WEIGHT REGAIN

Lauren E. Bradley, PhD

Although bariatric surgery is the most effective treatment for severe obesity, a substantial number of patients have poor weight loss outcomes and would benefit from postoperative intervention. One significant barrier to patients receiving this intervention is the well-documented loss to follow-up, with up to 72% of patients missing post-surgical appointments within two years after surgery. Moreover, researchers have consistently documented difficulty recruiting and retaining bariatric surgery patients in trials of postoperative intervention. Significant barriers to in-person treatment include geographical and time constraints. These barriers may be mitigated by utilizing innovative technological advances, allowing for better reach and engagement in treatment for this population. We developed a remote-based behavioral treatment program targeting the causes of weight regain, including maladaptive eating behaviors, delivered via online modules and brief phone coaching. In our initial open trial pilot study (n=16), participants rated the intervention as highly acceptable and demonstrated clinically significant weight losses. We are now evaluating the effectiveness of this 10-week intervention in a larger sample of post-bariatric surgery patients who are regaining weight compared to a wait-list control. Data collection is ongoing (current n=30), and retention is high (88%). Initial data from treatment completers (n=11) indicate high levels of satisfaction with the intervention (4.7 out of 5.0). Greater improvements in eating behavior, including symptoms of binge eating and emotional eating, in the treatment condition vs. wait-list control have been observed. However, weight losses in the treatment condition thus far are minimal ($0.7\% \pm 1.9\%$ total body weight loss) and not significantly different than those assigned to the wait-list control (n=14, i.e., $0.7\% \pm 2.6\%$ weight gain). Moderation analyses will be completed once data collection is complete (anticipated total n=50) to better understand which patients most benefit from this intervention. Overall, initial data indicate good retention and positive effects on maladaptive eating behaviors, and while short-term changes in weight appear minimal, the program may reduce weight gain over the longer term. The remote delivery method used appears to be a promising strategy for reaching a population that has been consistently difficult to reach and retain.

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Symposium 42C

APPLICATION OF ARTIFICIAL NEURAL NETWORKS FOR PREDICTING LONG-TERM BARIATRIC SURGERY OUTCOMES FROM PRE-OPERATIVE MARKERS

Dr. Diana Thomas, Ph.D.

Pre-operatively predicting individual success can improve patient response by identifying optimal surgical procedures and patient risk. Current models relying on regression have resulted in weak correlations. Neural networks offer a flexible method to amplify predictions in a manner that can assist in surgical decision making. To predict long-term weight loss success using artificial neural networks, we applied two separate surgical databases. The first database (N=491) consisted of surgeries performed using the sleeve method and contained data on 1-year diabetes remission and weight loss success (50% weight loss from baseline). The second database (N=216) included long-term (4 months to 1 year) results from gastric bypass, sleeve, duodenal switch, and band. Input neurons applied for the first database consisted of pre-operative age, weight, height, gender, sleep apnea, date of long-term weight measurement and hypertension status. Output neurons set as weight loss success defined by 15% weight lost from baseline. In the second database, input neurons included pre-operative age, weight, height, body mass, gender, diabetes status, and hypertension status. Output neurons were set to percent weight loss at the third follow up visit scheduled between 4 months and 1 year post surgery. Using only pre-op data as input neurons, the area under the curve (AUC) for neural network prediction for one year weight loss success was 0.73. The prediction for diabetes remission results in AUC of 0.79. With additional inputs such as surgery type and preoperative diabetes status, prediction of success was 0.86. The most important variables contributing to prediction were the data of follow-up visit, baseline weight, and patient age. The application of neural networks to predict the long-term impact of bariatric surgery from pre-operative data serves as an effective and superior method to existing models. Based on these results, we developed a user-friendly app that identifies optimal surgery type after input of baseline pre-operative data. A similar app was designed for 1 month post-surgery. This presentation will discuss the data and methods used to build our artificial neural networks, as well as provide a demonstration of the algorithm-based apps.

Symposium

43 8:00 AM-9:15 AM

EXTENDING THE REACH OF EVIDENCED-BASED TREATMENTS FOR VULNERABLE, HARD TO REACH, HIV-AFFECTED POPULATIONS IN SOUTH AFRICA

Christina Psaros, PhD¹, Greer A. Raggio, PhD, MPH², Jessica Magidson, Ph.D.³, Sannisha K. Dale, PhD⁴

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South Africa bears a disproportionate burden of medical (i.e., HIV/AIDS) and psychiatric illness (e.g., depression, substance use disorders). Yet, there is less than 1 physician per 1,000 people in South Africa, and even fewer psychologists/psychiatrists, making effective treatment and prevention a challenge. Improving our understanding of how to effectively deliver evidence-based treatments by paraprofessionals in this setting is imperative. Stigma around HIV and mental health further compromises the ability to deliver effective interventions. This symposium directly addresses the theme of the 2018 meeting of “extending our reach” by providing data from pilot studies aimed at increasing the reach of effective treatment and prevention interventions in vulnerable populations. Dr. Christina Psaros will present the results of a randomized pilot trial evaluating the preliminary efficacy of a problem-solving therapy based intervention to treat depression and improve adherence to the preventing mother to child transmission (PMTCT) cascade. This paraprofessional-delivered intervention focuses on pregnancy and postpartum behaviors meant to prevent vertical transmission of HIV, including postpartum continuation of antiretroviral therapy and initiation of contraception to better time subsequent pregnancies to maximize health outcomes. Dr. Greer Raggio will present findings from a study that examines the feasibility and effectiveness of a safer conception counseling intervention for HIV-positive men in South Africa that effected 100% ART uptake and enhanced safer conception practices. This study demonstrates expanding reach of services that historically have been unavailable to HIV-infected men. Dr. Jessica Magidson present findings from an implementation science study examining the feasibility and acceptability of peer-delivered substance use treatment in HIV care in South Africa. Findings have the potential to inform our future efforts to expand peer-delivered substance use treatment in under-resourced primary care settings. The discussant is Dr. Sannisha Dale, an expert in resilience, trauma, and health outcomes among individuals with HIV and those at risk for HIV, as well as psychosocial (e.g., discrimination) and structural factors (e.g., poverty) that relate to health disparities.

Symposium 43A

PROJECT INSPIRED: A PILOT TRIAL OF DEPRESSION AND ADHERENCE TREATMENT FOR HIV-INFECTED WOMEN IN SOUTH AFRICA

Dr. Christina Psaros, PhD

Introduction: South Africa has the largest number people living with HIV in the world with rates as high as 40% among pregnant women. Depression is a robust predictor of nonadherence to behaviors critical to optimizing health of HIV exposed infants and mothers, such as engagement in the prevention mother to child transmission (PMTCT) cascade; perinatal depression may affect upwards of 50% of women. Interventions that target mental health and adherence to PMTCT are urgently needed.

Method: 23 pregnant women age 18–45 (median age=24) diagnosed with HIV during the current pregnancy and receiving highly active antiretroviral therapy (HAART) were recruited from a district antenatal clinic in KwaZulu-Natal, South Africa and randomized to active treatment or wait-list control. The intervention was based on problem-solving therapy and targeted factors likely to impact depression (e.g., social support, stigma) and adherence to the PMTCT cascade, including postpartum contraceptive use. Assessments were conducted pre and post intervention with individual qualitative exit interviews. Outcomes were analyzed using independent samples t-tests; grounded theory was used to analyze qualitative data.

Results: Only 13% of pregnancies were planned and 61% of participants did not know their partner's HIV status. 83% of participants met criteria for major depression at baseline. Intervention participants had a significant decline in depressive symptoms (Edinburgh Postnatal Depression Scale) between pre and post treatment (M=19.62) relative to the control condition, ($t(21)=4.47$, $p<.001$). Intervention participants (M=98.4%) had greater self-reported HAART adherence at post treatment relative to controls (M=88.8%), though the difference was non-significant, $t(16)=-2.05$, $p=0.094$. All participants (both arms) reported initiating contraceptives. Social support from the intervention, improved self-esteem, and support for HAART pill taking emerged as prominent themes related to perceived benefits of the intervention. Participants expressed a desire for additional sessions.

Discussion: An evidenced based, combined depression and adherence treatment showed preliminary evidence of efficacy in this historically neglected and high risk population. Additional research is needed to demonstrate efficacy and identify strategies to disseminate effective interventions to HIV-infected women during the perinatal period to best optimize the health of women and children.

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Symposium 43B

SAFER CONCEPTION FOR MEN LIVING WITH HIV PLANNING TO CONCEIVE WITH AT-RISK PARTNERS

Dr. Greer A. Raggio, PhD, MPH

Background: Many men living with HIV (MLWH) desire children, leading to sexual practices that may put uninfected partners at risk. In eThekweni District, South Africa (SA), where 42% of women presenting for antenatal care test positive for HIV, use of safer conception strategies (e.g., adherence to antiretroviral treatment (ART), limiting unprotected sex to peak fertility) is critical for preventing HIV transmission. However, current prevention programs in SA do not routinely offer safer conception counseling for men or women.

Methods: We are conducting an open pilot of a safer conception intervention for MLWH who want to have children with HIV-negative/unknown-serostatus partners in eThekweni District, SA. The intervention was comprised of 5 individual counseling sessions led by a lay counselor. Session material emphasized cognitive-behavioral skills and education to promote safer conception strategies, with an emphasis on ART initiation/adherence. Men were eligible to participate if they were HIV-positive, not taking ART (or recently initiated), had an HIV-negative/unknown-serostatus sexual partner, and desired to conceive ≤ 1 year. Men completed quantitative surveys at baseline and post-intervention and a qualitative exit interview, and responded to SMS queries regarding sexual practices throughout. Study outcomes included study retention, HIV disclosure to pregnancy partner, ART uptake/adherence, and HIV-RNA suppression.

Results: Of 16 participants enrolled (median age, 29; range, 24–44), only 2 men had disclosed their HIV status to pregnancy partners at baseline. Ten (63%) have completed all 5 study visits to date (3 lost to follow-up, 3 ongoing). 63% of SMS responses showed consistent condom use with pregnancy partners outside the peak fertility period. Among completers, there was 100% ART uptake and viral suppression at post-intervention. Median ART adherence over time ranged 80–100% (group mean = 90%). HIV disclosure to pregnancy partners was reported by 80% of male participants by post-intervention.

Conclusions: A brief safer conception counseling program for MLWH promoted consistent condom use, and uptake of ART and HIV-RNA suppression among 100% of male completers. Given the challenges of engaging and retaining men in care, addressing reproductive goals appears to be a feasible and effective strategy to promote health and reduce transmission to partners and offspring. Future studies should evaluate feasibility and efficacy on a larger scale.

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Symposium 43C

ADAPTING EVIDENCE-BASED, PEER-DELIVERED SUBSTANCE USE TREATMENT FOR HIV CARE IN SOUTH AFRICA

Dr. Jessica Magidson, Ph.D.

Background: Substance use disorders (SUDs) are a known barrier to achieving the UNAIDS 90-90-90 treatment target in South Africa—the country with the largest HIV/AIDS burden globally. SUDs are prevalent in South Africa and interfere with HIV treatment adherence and viral suppression, yet are not routinely treated in HIV care. More research is needed to evaluate how to integrate SUD treatment into HIV care in South Africa using culturally adapted, evidence-based approaches.

Methods: This study is a hybrid-effectiveness implementation trial aiming to adapt a cognitive behavioral therapy-based intervention for substance use for integration into HIV care in Cape Town, South Africa. Phase I included semi-structured individual interviews with patients and providers at two clinic sites in Khayelitsha, a peri-urban area of Cape Town. Patients with moderate/severe substance use involvement (WHO-Assist score ≥ 4) and detectable HIV viral load, and HIV and SUD treatment providers across a range of disciplines and roles were enrolled. Patients and providers reported on preferences regarding an integrated substance use and adherence intervention and provided feedback on the proposed intervention components. Interviews were transcribed from isiXhosa into English and analyzed with thematic analysis using NVivo v. 11.

Findings: Patients ($n=19$) were 54% female, mean age=39.5 ($SD=8.2$), and 100% Black African. Prevalent substances were alcohol and marijuana. Mean WHO-Assist scores for alcohol were 15.75 ($SD=8.0$) and for marijuana 9.6 ($SD=11.89$). Providers ($n=11$) were 82% female, mean age=43.5 ($SD=7.6$), and 72.3% Black African. They included nurses, physicians, community health workers (CHWs), addiction and adherence counselors. Preferences for an integrated substance use and adherence intervention included: focusing on alternative positive activities not related to substance use, and using peers with their own personal history of addiction and HIV infection as interventionists. Treatment components were viewed to be appropriate and acceptable to patients and providers. Providers also suggested incorporating CHWs to screen for substance use during routine home visits for patients not engaged in HIV care.

Conclusions: Cognitive behavioral therapy-based interventions were seen as appropriate for treating substance use in this setting. Peers and lay health workers may be useful for integrating SUD treatment into HIV care in resource-constrained care settings in South Africa.

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Symposium

44 8:00 AM-9:15 AM

GXE INTERACTION IN OBESITY AND CHRONIC DISEASES: BIOLOGIC RISK AND NEURO-BEHAVIORAL DIFFERENTIAL SUSCEPTIBILITY

Laurette Dube, PhD¹, Spencer Moore, MPH, PhD², Robert Levitan, MD, MSc³, James L. Kennedy, MD, PhD³, Paul Franks, PhD⁴, Patricia P. Silveira, MD, PhD⁵¹McGill University, McGill Centre for the Convergence of Health and Economics, Montreal, PQ, Canada; ²University of South Carolina, Columbia, SC; ³University of Toronto, Toronto, ON, Canada; ⁴Harvard T.H. Chan School of Public Health., Boston, MA; ⁵McGill University, Montreal, PQ, Canada

Recent advances in genotyping has enabled genome-wide association studies of large population samples that have discovered polygenic risk scores for obesity and other lifestyle-related health problems, with evidence accumulating of moderating effects of diverse environmental layers over the life course. In parallel, multi-loci and candidate-gene studies have examined neurobehavioral responsiveness to environment in term of early life context and socio-economic status. These have provided support for dopaminergic genetic vulnerability under adverse conditions as well as vantage sensitivity to supportive environment (the Differential Susceptibility Hypothesis (DSH)). In spite of their potential for targeted prevention and treatment, neither line of work has been sufficiently integrated into public health, clinical research and practice, nor have the single and combined pathways of actions been examined in a single research pipeline. Yet, these multi-dimensional and multi-layered influences all contribute to behavior and health conditions at any point in time in diverse environments. This symposium brings together leading scientists that have done pioneer work in both lines of research with, as discussants, public health and clinician experts (Spencer Moore, public health scientist from Univ. of South Carolina; Robert Levitan, clinician scientist from Univ. of Toronto). Prof. Paul Franks will review current state of knowledge on genome-wide diet and physical activity interaction with adiposity, BMI and diabetes, presenting meta-analysis and findings on an European prospective cohort and the USA Diabetes Prevention Program. Prof. James Kennedy will review the current state of methodology and the advances in distinguishing biological and behavioral genetic risks and examining how they interact with environmental layers that accumulate over the life course to impact obesity and chronic diseases - findings from Canadian birth and adult prospective cohorts will be presented. Prof. Patricia Silveira will report three sets of empirical results from multi-loci and candidate-gene studies on two child samples that provide partial support for the DSH of dopamine signaling on the adaptiveness of food choice and body weight consequences. Environmental contexts range from fetal conditions to maternal sensitivity to the obesogenic food environment. Discussants will address challenges and possibilities awaiting scientists and practitioners in bringing societal-scale solution to both biological risk and neurobehavioral differential susceptibility. The session will be chaired by Laurette Dube, senior author in a *JAMA: Pediatrics* article supporting the DSH with results showing that children carrying a 7-repeat allele of DRD4 gene eat more fat than the sample average of their socio-economic living conditions if they are in low SES, but less fat than average if they live in high SES.

Symposium 44A

BIOLOGICAL AND BEHAVIORAL GENETIC RISKS AND THE INTERACTION WITH ENVIRONMENTAL LAYERS OVER THE LIFE COURSE

Dr. James L. Kennedy, MD, PhD

In this presentation, Prof. James Kennedy will review the current state of methodology and the advances in distinguishing biological and behavioral genetic risks and examining how they interact with environmental layers that accumulate over the life course to impact obesity and chronic diseases. Genomic structure and phenotypic plasticity is one ubiquitous characteristic found across most, if not all, life forms. The variation in structure, physiology and behavior arises in response to the state of past and present environments and is believed to be adaptive by proving increased biological fitness – enhancing survival and reproductive success especially in unpredictable or varying environments. Phenotypic variation generally arises during development and is believed to involve epigenetic mechanisms secondary to both internal and external environments. The most studied forms of developmental plasticity are related to the response to extreme or adverse insults. However, increasing interest is being given to responses to positive experiences, which altogether has been conceptualized under neurobehavioral differential susceptibility. This presentation will review the diverse methods to examine biological and neurobehavioral genetic versus environmental heterogeneity interaction as they related to lifestyle behavior, obesity and chronic diseases, presenting data from Canadian adult and children cohorts that brings insights into the mechanisms and intervention opportunities for a new era of more precise medicine.

Symposium

44B

LIFESTYLE AND DIABETES PRECISION MEDICINE

Paul Franks, PhD

This presentation will review the most recent 15 years of research that has combined major developments in genomic technologies and their application to large, well characterised collections of samples to examine the interplay of genetic variation, pharmacotherapy and lifestyle in obesity, type 2 diabetes and cardiovascular disease. Prof. Paul Franks will report genome-wide association studies of the GLACIER prospective cohort of around 20,000 adults and the USA Diabetes Prevention Program cohorts that have discovered polygenic biological risk scores for adiposity, BMI, diabetes, and cardio-vascular diseases as well as the more recent meta-analysis of the interactions of these biological genetic risks factors with eating and physical activity behaviors. He will also report on the recent discovery of novel biomarkers for type 2 diabetes as part of the DIRECT and RHAPSODY European projects for innovative medicines and explore how these biomarkers could inform the development of a full precision lifestyle and diabetes research program that goes beyond present precision medicine. Optimizing therapy using patient-level biomarker data has stimulated enormous interest throughout society as it can potentially provide more effective, less costly and safer ways of preventing, treating, and perhaps even curing diseases. Moving beyond one-size-fits-all public health interventions, applying a similar approach to both the biological and neurobehavioral genetic factors engaged in lifestyle behaviors could potentially enable the classification of individuals into subpopulations that differ in their susceptibility to a particular disease, in the biology and/or prognosis of those diseases they may develop, and/or in responses to a specific treatment with the expectation that preventive or therapeutic interventions can then be concentrated on those who will benefit from them, sparing expense and side effects for those who will not. This would be done by (1) helping to predict a person's susceptibility to adverse lifestyle exposures; (2) facilitating the stratification of type 2 diabetes into subclasses, some of which may be prevented or treated optimally with specific lifestyle interventions; (3) aiding the discovery of prognostic biomarkers that help guide timing and intensity of lifestyle interventions; and, (4) predicting treatment responses.

Symposium 44C

DOPAMINE AND DIFFERENTIAL SUSCEPTIBILITY TO SOCIOECONOMIC, MATERNAL AND OBESOGENIC ENVIRONMENTS IN CHILDREN

Dr. Patricia P. Silveira, MD, PhD

The differential susceptibility model states that the genetic background is associated with an increased risk of pathology in negative environments but greater than average resilience in enriched ones. While this theory was mostly explored in psychiatric-genetic research, it may also help us to unravel the complex ways by which genes and environment interact to influence the behavioral phenotype associated with risk for cardio-metabolic conditions. We reviewed evidence on gene vs. environmental interactions that influence obesity development, aiming to support the applicability of the differential susceptibility model for this condition, and propose that various environmental “layers” relevant for human development should be considered when bearing the differential susceptibility model in mind. Mother-child relationship, socioeconomic status and individual's response are important modifiers of BMI and food intake when interacting with gene variants, “for better and for worse”. While only a few studies to date have investigated obesity outcomes using this approach, we propose that the differential susceptibility hypothesis is in fact highly applicable to the study of genetic and environmental influences on feeding behavior and obesity risk. Moving beyond a “vulnerability” to a “differential susceptibility” approach to explore gene*environment interactions, we found that the interplay between genes and the early socio-economic environment may determine whether one has either increased fat intake or healthier than average eating. We reported a similar effect for maternal sensitivity affecting risk for overweight or obesity. In both cases, children that are the most biologically vulnerable to maladaptive behavior under adverse environments are also likely to be more responsive to improvement in the circumstances in which they are raised. Neighborhood food cues have been inconsistently related to residents' health, possibly due to variations in residents' sensitivity to such cues. Here we show that the degree to which children's predisposition to eat upon exposure to food environment and food cues (external eating and genetic background), could explain differences in strength of associations between their food consumption and the type of food outlets and marketing strategies existent in their neighborhood. In the first study, children with higher external eating scores, healthful food consumption was more positively related to vegetable displays, and more negatively to the display and variety of soft drinks. In the other study we found that the BMI of carriers of DRD4-7Repeat alleles were more sensitive to environmental differences in obesogenic quality of the food environment whereas BMI of non-carriers was insensitive to this contextual difference.

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Symposium 45

8:00 AM-9:15 AM

DIABETES: THE OTHER HARD-HITTING EPIDEMIC IN RURAL APPALACHIAN OHIO AND WEST VIRGINIA

Darlene E. Berryman, PhD, RD, LD¹, Anirudh V. Ruhil, PhD¹, Lesli Johnson, MSW, Ph.D¹, Elizabeth A. Beverly, PhD², Marilyn D. Ritholz, PhD³¹Ohio University, Athens, OH; ²Ohio University Heritage College Osteopathic Medicine, Athens, OH; ³Joslin Diabetes Center, Arlington, MA

Diabetes in the United States (US) has reached epidemic proportions, and the people of Appalachia have been disproportionately affected by this disease. Appalachia is a 205,000-square-mile region that encompasses 420 counties in 13 states from New York to Mississippi and includes 32 counties of Ohio and all of West Virginia. The Appalachian Region is 42% rural, compared to 20% of the US as a whole, and predominantly white (94.6%). The people in this region battle a poverty rate 1.5 times that of the US average, and suffer from higher unemployment, lower educational achievement, generally poorer health, and lower access to health care. Moreover, the Appalachian counties located in southeastern Ohio and West Virginia are designated as economically “distressed,” with nearly one-fifth to one-third of residents living below the poverty line. The Centers for Disease Control (CDC) annual Behavioral Risk Factors Surveillance System (BRFSS) has long been the most widely used source for county-level estimates of diabetes incidence rates. Since 2004, the CDC has utilized small area estimation techniques to fill-in information for counties that were either not sampled in a given year or had very few respondents in the diabetes module. However, accurate information about the prevalence of diabetes is needed to design primary and secondary prevention strategies as well as tertiary care protocols. This symposium includes three presentations. The first presentation examines the findings from the telephone survey with items drawn chiefly from the BRFSS diabetes module to gather our localized data. This presentation also will include geographic information system (GIS) mapping data showing diabetes prevalence rates by county, available healthcare resources (e.g., hospitals, pharmacies, Federal Qualified Health Centers), and food deserts in the region. The second presentation explores the patient experience via interviews and focus groups from those living with diabetes in southeastern Ohio and Wood County, West Virginia. Lastly, the third presentation draws on qualitative data from in-depth interviews of health care providers assessing barriers to providing care and system-level challenges unique to this region. The discussant will weave together findings from all three presentations to emphasize the burden of diabetes in southeastern Ohio and Wood County, West Virginia. Finally, the discussant will address the potential influence of Appalachian culture on diabetes rates and offer practice implications for this critical clinical situation.

Symposium 45A

LOCATION, LOCATION, LOCATION: THE RELATIVE VALUE OF DIRECT VS. INDIRECT SURVEY ESTIMATES

Dr. Anirudh V. Ruhil, PhD

The CDC annual BRFSS has long been the most widely used source for county-level estimates of diabetes incidence rates. Since 2004, in particular, the CDC has utilized small area estimation (SAE) techniques to fill-in information for counties that were either not sampled in a given year or had very few respondents in the diabetes module. These estimates allow for some trend analysis for adults 20 years-old or older. Three factors, unfortunately, limit the value of these CDC estimates in comparison to direct survey-based estimates. First, the margin of error for these estimates tends to average around +/- 4 percentage points. Second, detailed analysis of diabetes incidence or prevalence rates by age, sex, and any other demographic, socioeconomic, or comorbidity condition is beyond the reach of researchers interested or service providers working with populations living in small counties typically not sampled by the CDC. This is not surprising because the BRFSS tends to sample the larger counties in a state, virtually guaranteeing that direct BRFSS estimates will be unavailable for most rural counties. Finally, even when available, CDC estimates lag by several years; most recent estimates CDC provides are for 2014. Consequently, one of the best means of securing localized, timely, and detailed information on diabetes prevalence and needs of residents in rural areas is a cost-effective survey. With this goal in mind, we conducted a diabetes prevalence survey in seven southeastern Ohio Counties and Wood County, West Virginia. The survey instrument was designed with items drawn chiefly from the BRFSS surveys that include a diabetes module to gather our localized data. Respondents self-reported (via a screening question on the survey) either that they had been diagnosed with diabetes or that they were the primary caretaker for a household member diagnosed with diabetes. A stratified quota-sampling scheme was employed, with strata defined by the distribution of adult (18 years-old or older) males and females in each county. With an effective sample size of 1,884 respondents, our findings indicate a much higher diabetes prevalence rate in the eight counties surveyed than reflected by CDC estimates. Specifically, the diabetes prevalence rate was 19.9%, and of those reporting they had diabetes 14.0% had nephropathy, 17% had retinopathy, and 24.0% had neuropathy. These findings along with GIS data highlight the diabetes epidemic in rural Appalachia.

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Symposium 45B

THE PATIENT EXPERIENCE: LIVING WITH DIABETES IN APPALACHIA

Dr. Lesli Johnson, MSW, Ph.D

The qualitative data for this study is intended to better understand the experiences of individuals living with diabetes in an eight county Appalachian region. The Appalachian region examined in this study included seven southeastern Ohio counties and Wood County in West Virginia. Interviews (10) and focus groups (36) were conducted with patients (44) diagnosed with diabetes and family caregivers (2) for individuals with diabetes. Seventy percent of the participants were female, 29% of the participants were between 55–64 years old and 49% were 65 years old or older. Participants were asked about their experiences with medical professionals, accessibility of resources needed to manage diabetes, and the strategies they use to manage their diabetes. All interviews and focus groups were audio recorded and transcribed. Thematic and content analysis was completed using MAXQDA, a qualitative data management program. The results reveal many barriers including trouble accessing needed resources, financial strain, lack of motivation, difficulty with insurance, and lack of social support. Some participants report lacking access to exercise facilities, grocery stores, endocrinologists, and nutritionists. Many participants struggle to manage the financial burden of having diabetes including the cost of food, insurance, prescriptions, medical care, transportation, and exercise facilities. Despite the barriers, many participants also discuss positive experiences and supportive factors that have helped them effectively manage their diabetes. The majority of participants, who had attended a diabetes education class note that this experience provided many beneficial tools for managing diabetes. Participants articulate a variety of positive and negative experiences with medical professionals; however, there is broad consensus about the qualities that they value in a health care provider. They want physicians to listen to them, treat them with compassion, provide them with clear instructions, and stress the urgency of managing diabetes. Overall, the results of this study provide a better understanding of the experiences of patients in this region. These results can inform healthcare approaches needed to address the needs and strengths of this population.

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Symposium 45C

DIABETES FATALISM, MENTAL ILLNESS, AND SOCIAL DETERMINANTS OF HEALTH IMPACT PROVIDERS' ABILITY TO TREAT PATIENTS IN APPALACHIA

Dr. Elizabeth A. Beverly, PhD

In diabetes, patient-provider collaboration is associated with increased self-efficacy, improved quality of life, decreased negative attitudes toward living with diabetes, and improved glycemia. Thus, this collaboration is critical in achieving optimal outcomes in diabetes. Yet little is known about patient-provider collaboration in rural Appalachian Ohio and West Virginia, which may explain why diabetes rates are more than double the national average. The purpose of this qualitative study was to explore providers' perceptions of barriers and needs to treating diabetes in rural Appalachia. A purposive sample of 43 providers (mean age=45.3 ± 12.0, 67.4% female, 95.3% white, 34.9% physicians, 17.3 ± 11.6 years of experience) participated in semi-structured interviews. Interviews were transcribed, coded, and analyzed via content and thematic analyses using NVivo 10 software. Qualitative analysis revealed three themes: 1) Difficulty Communicating the Severity of Diabetes: Providers struggled to communicate the severity of diabetes and its related complications to patients with diabetes. Providers felt that the pervasiveness of diabetes in the region contributed to indifferent and apathetic views toward diabetes. 2) Fatalistic Attitudes and Comorbid Mental Illness: Providers recounted story after story of patients believing that they were predestined to develop diabetes because everyone in their family had it. Further, providers described patients feeling hopelessness and helplessness about their diabetes, which many attributed to the high rates of comorbid mental illness in the region. 3) Social Determinants Affecting Diabetes Care: Providers recited numerous barriers influencing patients' ability to manage their diabetes effectively, including poverty, low education, food insecurity, housing issues, transportation barriers, limited or no insurance, lack of specialists, and minimal social support. Findings indicate that providers struggled to communicate the severity of diabetes and related complications to patients living in rural southeastern Ohio and Wood County, West Virginia. In addition, providers felt that the high prevalence of diabetes in families, persistent poverty, and high rates of comorbid mental illness contributed to fatalistic attitudes toward diabetes. A centralized system to enhance communication and coordinate providers, behavioral health care, community resources, and diabetes education is needed to better serve patients in this rural, underserved region of the country.

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Symposium 46

8:00 AM-9:15 AM

MOBILE BEHAVIORAL HEALTH TECHNOLOGY TO EXTEND OUR REACH: APPLICATIONS IN CHRONIC DISEASE, PRIMARY CARE, AND ADOLESCENT HEALTH

Megan Oser, PhD¹, Bonnie Spring, PhD², Charles Jonassaint, PhD MHS³, Jessica S. Yu, Ph.D.⁴, Alina Liao, MBA, MA in Education, Stanford University. BA English & Economics, Yale University⁵

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Individuals who experience higher levels of stress and trauma throughout their life are at increased risk for poor health and early mortality. Several evidence-based interventions exist for the treatment of stress-related disorders; however, availability and access to evidence-based interventions is limited due to the lack of trained mental health professionals, prohibitive costs particularly when lacking insurance coverage, and the inconvenience and time intensive nature of regular psychotherapy. As such, despite the increasing evidence supporting the beneficial effects of psychological and behavioral health treatments for mental and physical health, the uptake of these evidence-based practices has been poor.

Over the past decade, mobile technology ownership has radically increased for people of all ages. The penetration of mobile technology has reached all race/ethnicity groups and socioeconomic strata. The pervasiveness of technology across all populations has led to excitement surrounding the potential for mHealth to improve delivery of evidence-based care, increase utilization and sustainability of these services, and ultimately, positively impact public health. Unfortunately, the implementation of mobile technology-based interventions was not as straightforward as initially perceived resulting in limited evidence that mHealth tools were effective for improving health outcomes. Recently, however, there have been several advances to using mHealth for delivering high quality and evidence-based care.

This symposium reviews three different strategies for delivering psychological and behavioral stress management interventions via mobile technology. There are several critical issues to consider regarding the design and implementation of mHealth to ensure these interventions are maximally effective and sustainable. We present perspectives from both academia and industry showcasing the reach of behavioral health and medicine interventions and the future of mHealth in health care.

Symposium

46A

FEASIBILITY OF IMPLEMENTING MENTAL HEALTH TREATMENT IN ROUTINE ADULT SICKLE CELL DISEASE CARE USING A MOBILE TECHNOLOGY-BASED INTERVENTION

Dr. Charles Jonassaint, PhD MHS

Sickle cell disease (SCD) is a severe hemoglobinopathy that affects approximately 100,000 people in the US but disproportionately affects those of African descent. Patients living with SCD typically suffer from daily chronic pain and recurrent, unpredictable, vaso-occlusive episodes ("pain crises") that are characterized by severe pain and often require immediate medical attention. Sufferers of the disease, most of whom are ethnic minorities from disadvantaged backgrounds, report significant psychosocial stress and are at higher risk for psychiatric disorders. Indeed, a recent review found that 26–57% of patients with SCD report clinically significant depressive symptoms. However, only a small percentage of patients are receiving mental health care. Lack of availability and access to evidence-based behavioral treatment has been a significant barrier to improving the care of these patients. Viable strategies for addressing the mental health of patients living with SCD are needed. Therefore, the objective of this study was to test the acceptability and implementation of an online computerized cognitive behavioral therapy (CCBT) intervention called Beating the Blues that can be accessed on a mobile device.

Methods: All adult patients (age 18–65) with a diagnosis of sickle cell disease and significant symptoms of depression (defined as PHQ-9 score ≥ 10) and/or anxiety (GAD-7 score ≥ 10) were randomized 2:1 to receiving eight sessions of Beating the Blues with care coach support or usual care. Participants in both groups received an iPad mini to enter daily pain and mood symptoms. The treatment group also used the iPad for accessing the Beating the Blues program. Depression and anxiety and pain symptoms were assessed at 1-, 3- and 6-months.

Results: Thirty patients were enrolled, 18 to CCBT and 12 to usual care. All patients completed at least one follow-up visit except for one patient in the CCBT arm. At 6-months follow-up, patients in the CCBT arm reported a marginally greater decrease in PHQ-9 depressive symptoms (-3.82, SE=1.30) than those in the TAU group (-.50, SE=1.60; $p=.06$)(Figure 2). There were no significant effects of treatment group on change in GAD-7 anxiety symptoms or current pain intensity level. In qualitative interview post intervention, patients expressed liking the structure, care coach support, simplicity of the language, homework activities, and practicality ("it really does work once you start listening and paying attention").

Conclusion: As a first step toward delivering effective mental health care to patients with SCD, this study tested computerized cognitive behavioral therapy, delivered via mobile device, to adults living with SCD. The data showed that the intervention modality is feasible in real-world, non-ideal conditions, is relevant to the target population, and has the potential to improve patient reported outcomes.

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Symposium 46B

IMPLEMENTATION, ENGAGEMENT, AND EFFECTIVENESS OF LANTERN, A COGNITIVE BEHAVIORAL MHEALTH PROGRAM FOR ANXIETY IN PRIMARY CARE

Dr. Jessica S. Yu, Ph.D.

More mental health visits occur in primary care than in other settings with anxiety disorders being the most prevalent presentation. Thus, expanding the reach of evidence based behavioral health care within primary care is paramount. Cognitive behavioral therapy (CBT) is well established as the gold standard, evidence-based psychological intervention for anxiety. In pace with the digital revolution of the past two decades, CBT can now be provided via interactive, digital platforms that increases access to services. Lantern, a mobile phone app, is one such digital cognitive behavioral program combining evidence-based anxiety management skills with motivational-behavioral skills coaching. A prospective, pragmatic study conducted at the University of Pittsburgh Medical Center (UPMC) evaluated the implementation, user engagement, and early effectiveness of Lantern among patients with elevated anxiety referred by their primary care physicians.

Methods: Two primary care clinics offered Lantern. Adult patients (ages 20–65) with GAD-7 ≥ 5 on routine clinical screening were invited to participate. At active sites, physicians ordered Lantern for eligible patients through the electronic medical record. Anxiety symptoms are assessed at baseline and 2-, 6-, and 12-months. Here, we present preliminary findings from baseline to 2 months.

Results: 633 patients consented to the study and were provided access to Lantern. 218 completed at least 1 session. At time of analysis, 77 had both baseline and 2-months GAD-7 scores available. At 2-months, participants used Lantern an average of 14.8 days (SD=15.6), completed 9.10 sessions (SD=13.5; 24.5% of program), and practiced 13.0 techniques (SD=19.2). Adjusting for age, gender, medical complexity, and physical health quality of life anxious symptomatology (GAD7) significantly decreased from baseline to 2-months ($B=-2.07$, $SE=0.694$, $t(75)=-2.98$, $p=0.004$). Those with GAD7 > 9 at baseline ($n = 44$), which is suggestive of an anxiety disorder, experienced a clinically meaningful reduction in anxiety symptoms (5.75 point reduction on GAD7; $p < .0001$) with a large within subject effect size ($d = .88$) at 2 months.

Conclusion: Our results indicate that digital behavioral health interventions like Lantern can be implemented within real world primary care settings and are effective in helping patients manage their anxiety. Implementation methods and outcomes within primary care clinics will also be discussed.

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Symposium 46C

MINDRIGHT: HOW TEXT MESSAGING CAN IMPROVE THE WELLNESS OF YOUNG PEOPLE EXPOSED TO COMPLEX TRAUMA

Alina Liao, MBA, MA in Education, Stanford University. BA English & Economics, Yale University

Research-based interventions for low-income youth with complex trauma exist but are often inaccessible to this population. Proactively outreaching to youth on an ongoing basis is needed. Text messages have a 99% open rate among teenagers. We thus created MindRight, a non-clinical service that provides socioemotional coaching over text message to youth of color impacted by complex trauma. We train volunteers to serve as coaches, who check in with users daily. Our coaching draws from Trauma-Focused Cognitive Behavioral Therapy, Acceptance Commitment Therapy, and positive psychology. We provide a judgment-free space to talk; positive affirmations; psychoeducation; and stress management skill-building.

Method: We are conducting a study comparing those who initiated MindRight and those who did not among a group of students at a Washington, DC high school. 144 students, ages 14–15, were offered MindRight. Before providing the service, students completed the Adverse Childhood Experiences (ACEs), a non-clinical assessment of post-traumatic stress disorder (PTSD) symptoms, and the EPOCH Adolescent Measure of Psychological Well-being. The EPOCH was re-administered at 10 weeks. Here, we characterize students who chose to start vs. those who did not and characterize texting activity among students who engaged with the service and who experienced improvement in EPOCH scores.

Results: Among those who started MindRight ($n = 50$; 58% female), 44% had an ACEs score of 3 or higher, and 10% had 3 or more symptoms of PTSD (out of 4). Of those who did not initiate MindRight ($n = 94$; 49% female), 35% had an ACEs score of 3 or higher, and 46% had 3 or more PTSD symptoms. Qualitative results show that the most common reason for not using MindRight was not believing one needed emotional help. Having someone to talk to or better manage emotions was most common reason for starting MindRight. In the first 2 weeks, 7,965 texts were exchanged, with 58% sent by coaches and 42% sent by students. By the third week, the average chat length per student per day was 9 texts exchanged. The longest text chain comprised 106 texts. Chats included both rapport-building and providing an intervention. Primary outcomes comparing changes in students' EPOCH scores are being collected. Findings on EPOCH changes between groups and differences in texting activity within the MindRight group will be presented. How conversations differ in their extent of "rapport building" vs. intervention and correlations between length of text conversations and usage rates with EPOCH score change will be presented.

Conclusions: Delivering interventions via text message can make interventions more accessible and help reduce mental health stigma as a barrier to adoption. Building a positive rapport and relationship with students over text message contributes to student engagement with intervention content.

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Paper Session 23: How Do We Incentivize Physical Activity 10:45 AM-11:00 AM

EFFECTIVENESS OF AN INCENTIVE-BASED MHEALTH INTERVENTION TO PROMOTE SUSTAINED PHYSICAL ACTIVITY IN TWO CANADIAN PROVINCES

Marc Mitchell, PhD¹, Lauren White, MSc², Guy Faulkner, PhD³

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Objective: The Carrot Rewards application ('app') was developed as part of a novel public-private partnership to reward Canadians with loyalty points (e.g., movies, groceries) for engaging in healthy behaviors, such as walking. The purpose of this study was to examine whether "micro-incentives" tied to daily step goal achievement (assessed by 'built-in' smartphone accelerometers) could promote sustained physical activity.

Methods: A 32-week prospective cohort (pre-post) study was conducted in which 36,071 participants (26,369 from British Columbia and 9,702 from Newfoundland and Labrador) were enrolled in the Carrot Rewards walking program between June 13 and August 6, 2016. During the two-week baseline (or 'run-in') period, mean steps/day were calculated for each participant. Thereafter, participants earned "micro-incentives" (\$0.04 Cnd) every day they reached their baseline mean (i.e. level of first daily step goal). Participants earned additional points (worth \$0.40 Cnd) for meeting their step goal 10 out of 14 days. Upon meeting the 10-day contingency, participants could increase their daily goal by 500 steps, with the objective of gradually increasing their number of steps by 3,000 each day. The primary study outcome was mean steps/day (baseline vs. Study Week 32), and was analyzed for the whole study population as well as for lower active participants (<5,000 steps/day at baseline) using dependent t-tests.

Results: Among users enrolled in the Carrot Rewards walking program, 15,645 had complete data sets (4 valid days in Study Week 32; 43.37%) and were included in the analysis (34 ± 11 yrs; 65.12% female). The whole study population averaged $5,791 \pm 2,793$ steps/day during the baseline period; 42.05% of users ($n = 6,578$) accumulated less than 5,000 steps/day during the baseline. At Study Week 32, compared to baseline, users accumulated an additional 244 steps/day, representing a 4.21% relative increase (95% Confidence Interval: 186, 301, $p = .000$). For lower active participants an increase of 1,215 steps/day was observed, representing a relative increase of 34.45% (95% Confidence Interval: 1,142, 1,288, $p = .000$).

Conclusions: Providing immediate "micro-incentives" for individualized daily step goal achievement promoted physical activity on a population-scale for 8 months (the theoretical definition of behavior maintenance is 6+ months). The effect was much more pronounced among lower active participants.

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Paper Session 23: How Do We Incentivize Physical Activity 11:00 AM-11:15 AM

DELAY DISCOUNT RATE MODERATES A PHYSICAL ACTIVITY INTERVENTION TESTING IMMEDIATE REWARDS

Christine Phillips, PhD¹, Jane C. Hurley, MS², Michael Todd, PhD¹, Siddhartha S. Angadi, PhD., FASCSM², Vincent Berardi, PhD³, Melbourne F. Hovell, PhD, MPH⁴, Marc A. Adams, PhD, MPH¹

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Financial incentives likely increase physical activity (PA), but individual differences in delay discounting rates (preference for immediate or delayed rewards) and immediacy of reward delivery may explain differential responding. The current study tested whether reward schedule preference moderated effectiveness of smaller immediate vs. larger delayed financial rewards on increasing daily PA. We hypothesized that participants randomized to study arms matching their reward preferences would show greater PA change.

Method: Inactive adults ($N=96$, age 18–60, BMI 25–55 kg/m²) were randomized to receive either smaller, immediate rewards or larger, delayed rewards for meeting PA goals over 4 months. Those who completed the Monetary Choice Questionnaire (MCQ; $N=85$) were classified as Immediate Reward Preference or Delayed Reward Preference based on a median split of MCQ-derived values for proportion of choices favoring immediate rewards (range 0–1; $Mdn=.56$). Interactive effects of reward preference and intervention arm on change in mean steps/day from baseline to intervention and rate of change in steps/day during the intervention phase were tested in linear mixed models adjusting for covariates.

Results: Across all groups, PA increased by 2302 steps/day on average from baseline to intervention ($p<.001$), and declined by 10 steps/day during the intervention phase ($p=.28$). Immediate preference/immediate reward participants showed greater increases in steps/day from baseline to intervention than either delayed preference/delayed reward ($b=-931$, $p=.03$) or immediate preference/delayed reward ($b=-1142$, $p=.008$) participants. Relative to the immediate preference/immediate reward group, delayed preference/immediate rewards group did not differ ($b=-200$, $p=.632$). During the intervention phase, steps/day decreased faster for those preferring immediate rewards than for those preferring delayed rewards. Relative to the immediate preference/immediate reward group, delayed preference/immediate rewards ($b=14.1$, $p=.002$), and immediate preference/delayed rewards groups ($b=7.2$, $p=.058$) had slower declines.

Conclusions: Smaller, immediate financial rewards increased PA irrespective of immediate or delayed reward preference. Over time, incentive potency waned among higher discounters and remained stable among lower discounters. Interventions using financial incentives may be optimized by considering individuals' delay discount rates.

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Paper Session 23: How Do We Incentivize Physical Activity 11:15 AM-11:30 AM

EFFECTS OF CONTINUOUS REINFORCEMENT VS. VARIABLE MAGNITUDE AND PROBABILITY REINFORCEMENT ON ADULTS' PHYSICAL ACTIVITY

Marc A. Adams, PhD, MPH¹, Vincent J. Berardi, MA, PhD², Christine Phillips, C.S.C.C., M.S.S., PhD¹, Jane C. Hurley, MS³, Michael Todd, PhD¹, Melbourne F. Hovell, PhD, MPH⁴, Siddhartha S. Angadi, PhD., FASCSM³

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Background: Financial rewards can increase and maintain health behaviors, but little research has quantified steady-state patterns under different reinforcement schedules for promoting moderate-to-vigorous physical activity (MVPA) among free-living adults.

Purpose: This secondary analysis of data from one arm of an RCT examines the effects of six different reinforcement stages, each characterized by a different positive reinforcement schedule, on participants' MVPA.

Method: Participants (N=187) wore an ActiGraph GT9X daily (32,632 observations) in a one-year intervention. Participants were prescribed MVPA goals (i.e., MVPA bout minutes) and could earn rewards daily for meeting goals. As participants met goals, they progressed through four stages, transitioning from one to the next after meeting 24 goals: 1) continuous fixed reinforcement (\$1 per goal met), 2) continuous variable magnitude (\$0.25 to \$2.50/goal met, all goals earned a reward), 3) variable magnitude and probability (\$0.25 to \$2.50/goal, 8% of goals earned \$0), 4) variable magnitude and probability (\$0.25 to \$2.50, 17% of goals earned \$0). Rewards denominations were randomized and total amounts within each stage summed to \$24 ($M=\$1/\text{goal}$). Participants were paid immediately via electronic gift cards after earning \$5.00. We averaged cumulative MVPA bout minutes/day (bm/d) over all participants on each day in each stage to investigate potential differences between stages.

Results: Rate of growth in cumulative MVPA bm/d increased across stages, with Stage 1 (continuous fixed reinforcement) having the smallest slope. Linear regression indicated that a slope of 23.8 bm/d in Stage 1 increased to 30.1 bm/d in Stage 2 ($= 6.3, p<.001$). The slope increased by an additional 2.1 bm/d at Stage 3 ($p=0.23$) and increased by 12.5 bm/d at Stage 4 ($p<.001$). When repeating this analysis with only the highest-performing participants, the between Stage 1 and Stage 2 was smaller (2.8 bm/d, $p<.001$) and slopes for other adjacent pairs of stages were more similar.

Conclusion: Progression through both variable magnitude and variable probability reinforcement schedules resulted in higher MVPA than observed with continuous fixed reinforcement alone, with leaner probability schedules producing the largest amount of MVPA accrual. Variance was not constant across subjects and was smallest for the highest performing participants. Implications for behavioral maintenance will be discussed.

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Paper Session 23: How Do We Incentivize Physical Activity 11:30 AM-11:45 AM

INCENTIVIZING BEHAVIOR CHANGE SKILLS TO PROMOTE WEIGHT LOSS

Corrine Voils, PhD¹, Sarah L. Hale, PhD², Jane Pendergast, PHD³, Jennifer Gierisch, PhD, MPH⁴, Megan McVay, PhD⁵, Elizabeth Strawbridge, MPH, RD, LDN⁶, Erica Levine, MPH³, Allison C. White, N/A³, William Yancy, Jr., MD, MHS³, Shelby Reed, PhD⁷, Yanhong Li, MS⁷, Gary Bennett, PhD³, Ryan Shaw, PhD RN³

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Objectives: Financial incentives for dietary self-monitoring (SM) and weight loss may increase weight loss. Previous studies have required attendance at in-person sessions to submit food logs for an incentive, representing a confound, and/or have incentivized people for weight loss at the end of a study. To capitalize on the potential efficacy of incentives for behavior change, we must be able to incent people in real-time without requiring attendance. We developed an information technology solution that automatically collects data from MyFitnessPal and Internet-connected body weight scales, analyzing data weekly to determine if participants qualify for incentives. Each week, participants receive a text message informing them about whether they earned money, and if so, how much. They were given credit on a cash card. In a clinical trial pilot study (R34), we evaluated the feasibility and acceptability of this approach for incenting weekly SM and weight loss.

Methods: All participants received a 6-month, group-based weight loss program. Participants were randomized to one of four conditions represented by a 2 (incentives for SM: yes vs. no) x 2 (incentives for weight loss: yes vs. no) factorial design. The study was conducted in 3 sequential cohorts of approximately 32 participants. For each cohort, we evaluated recruitment and retention rates, session attendance, and weight loss. We conducted qualitative interviews with a subset of participants to inform changes for the next cohort.

Results: In cohort 1, mean weight loss was 9.5%, mean attendance was 8.6/13 sessions, and retention was 85%. For cohort 2, we switched from a low-carbohydrate diet (LCD) to a low-calorie diet, changed advertisements to obtain a more diverse sample, and added twice-weekly campaign-style motivational text messages. In cohort 2, mean weight loss was 3.9%, mean attendance was 7.6/13 sessions, and retention was 77%. For cohort 3, we switched back to the LCD, switched from \$0 to \$2 as the lower bound for a weekly incentive, added an extra group session at week 1 to provide additional instruction on MyFitnessPal, and mailed a retention letter to participants at month 5. Results for cohort 3 will be available at the meeting.

Conclusion: Results of this planning study support the feasibility and acceptability of using an IT solution to incent patients in near real-time for dietary SM and interim weight loss independent of group session attendance. We plan to conduct a multi-site randomized trial to evaluate the efficacy of this approach.

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Paper Session 24: Expanding Engagement with Digital Health Tools

10:45 AM–11:00 AM

AN RCT OF ONLINE AND SOCIAL NETWORKING INTERVENTIONS IN YOUTH WITH ALCOHOL USE DISORDERS AND COMORBID DEPRESSION

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Aims: This paper will report on the use of novel digital tools (namely Facebook and social networking) in the largest trial to date of online treatments for comorbid depression and alcohol misuse in young Australians. The iTreAD study aimed to examine the effect of combining social networking with online psychosocial treatment for young people with alcohol use disorder and comorbid depression. We hypothesize that the combination of social networking and online psychosocial treatment will be associated with increased use of the online treatment program, and superior reductions in alcohol use and depressive symptoms in young people.

Methods: Participants aged 18–30 years were recruited via Facebook to a study comparing: (1) online monitoring for alcohol use and depressive symptoms, (2) online monitoring combined with online automated cognitive behavior therapy (CBT), or (3) online monitoring combined with automated CBT and a clinician-moderated online social networking application (Breathing Space—a purpose-built social networking site) over 12-months. Following baseline assessment, participants were randomized to treatment conditions, with independent follow-up occurring at 6-, 12-, and 18-months post-baseline.

Results: Of the 3,700 young people who completed screening data for the trial, 426 participants met eligibility criteria and commenced the study. On average, participants who were allocated to Breathing Space accessed the site 51 times over 12 months (5–6 month, maximum 1,320), posted an average of 3 times (maximum 23), provided an average of 12 comments, and made an average of 7 empathic responses per participant. Young people reported that being able to post about their thoughts and feelings in a non-judgmental and “safe” environment was beneficial, and preferred to “real time” support offered via telephone or other modes of delivery. Participants randomized to the Breathing Space also completed significantly more modules of the online automated cognitive-behavioral intervention than participants in the other conditions (48% vs. 28% completed 2 or more modules). Over time, significant reductions in alcohol use were reported by participants in all conditions ($p=0.01$), with the largest effect observed among those in the Breathing Space condition (clinically significant). Significant reductions in depression were also observed across all treatment conditions ($p=0.01$), with no clinical or statistical differences between groups. Twelve-month data relating to treatment outcomes, and satisfaction with treatment will be discussed.

Conclusions: Web 2.0 platforms show promise for delivering treatment to traditionally hard-to-reach populations (young people, and comorbid mental health and addiction), and may enhance uptake of online psychosocial interventions. Online monitoring as a first step also shows promise in this group.

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Paper Session 24: Expanding Engagement with Digital Health Tools

11:00 AM–11:15 AM

REACHING SMOKERS WHO ARE NOT MOTIVATED TO QUIT: A MOBILE APP TO ENHANCE WELL-BEING AND ENCOURAGE CESSATION

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Behavioral Activation (BA) is an evidence-based treatment for depression that fosters engagement in values based activities (VBA) to increase access to sources of positive reinforcement. Depressed mood has been shown to hinder smoking cessation. The aim of this study is to pilot test a mobile app (ImWell) that uses BA to motivate smokers to quit via engagement in VBAs focused on increasing environmental rewards and keeping smoking cessation in mind through occasional motivational messages to quit smoking. Users were encouraged to set two VBAs per week via the app and received automated weekly feedback on their mood, smoking rate, and progress with setting & completing VBAs. The app also provided smoking cessation resources. We hypothesized that ImWell would smoke fewer cigarettes per day, be more motivated and confident to quit smoking, and have better mood vs. controls. 56 adult smokers (M age =34.5 years, M cigs/day = 13.4) who were not ready to quit smoking within 30 days were randomized to either 8 weeks of ImWell (n=27) or control group (no app; received resources for quitting smoking & completed weekly online assessments n=29). Both groups completed online assessments at baseline and follow-up. ImWell also completed daily and weekly in-app assessments. Four participants did not complete the follow-up survey (2 in each group); there were no dropouts. Among ImWell, 100% planned at least one VBA, 25/27 planned VBAs beyond the initial download and registration, and 24/27 planned VBAs in both months of the trial. A total of 253 VBAs were planned and 109 were completed. Although the sample was not motivated to quit, no one rated the smoking messages as ‘difficult to understand’, ‘unacceptable’ or ‘uninformative.’ 20/25 of ImWell said they would recommend it to ‘several’ or ‘many’ people and 24/25 said the process of identifying VBAs was easy. After controlling for baseline values, at follow-up, ImWell smoked fewer cigarettes per day than controls (10.6 vs. 16.6; Cohen’s $d=0.51$, $F(1,48)=2.89$, $p=.10$), had greater motivation to quit smoking ($d = .20$), greater confidence to quit smoking ($d = .14$), and lower CESD scores ($d = 0.18$). 76% of ImWell viewed in-app smoking cessation resources, 20% of whom reported contacting the resources. These data show that smokers who are not motivated to quit will use the app, that they find the app appealing, and that the app has the potential to improve mood and reduce smoking.

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Paper Session 24: Expanding Engagement with Digital Health Tools

11:15 AM-11:30 AM

ENGAGING THOSE WITHOUT INTENTIONS TO QUIT: SMOKER ENGAGEMENT IN A MHEALTH TOBACCO CESSATION PROGRAM

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Background. Motivation phase smokers, i.e. smokers not actively trying to quit, are a difficult population to engage in smoking cessation interventions. Mobile health (mHealth) innovations, including responsive 2-way text messaging and smart phone applications (apps), can be leveraged to address some of the barriers faced when targeting motivation phase smokers. Engagement in mobile health smoking cessation interventions and the subsequent effects on smoking cessation-related behaviors are understudied in this population. The purpose of this analysis is to examine the impact of intervention engagement on smoking cessation goal setting by motivation phase smokers.

Methods. The Take a Break study is a randomized controlled trial evaluating a pre-cessation intervention among motivation phase smokers. Engagement with the intervention was measured by responses to daily text message assessing the number of cigarettes smoked and tobacco cravings and urges. After smokers engaged in the intervention for 1 week, they were asked to set a goal for the number of days to attempt being abstinent during the following 2 weeks. The relationship between engagement with the intervention and subsequent cessation goal setting during the following 2 weeks was analyzed using Pearson's chi2 test. Daily self-reported cigarettes smoked and reductions in CO readings taken at the end of 3 weeks compared to baseline are reported.

Results. Thirty-two smokers engaged in the text messaging system. These smokers were on average 53 years old, 56.2% female (N=18), and 90.0% white (N=28). Smoker engagement with the texting system was high, at 77.0% (N assessments responded=188, N assessments possible=244). Engagement varied by smoker, ranging from 0 to 14 responses to assessments with a median of 12 responses. The majority of smokers (N=25/32, 78.1%) set an abstinence goal for the challenge. Abstinence goals ranged from 0 to 14 days, with a mean of 4.2 days (SD: 5.2). The relationship between engagement in week 1 and goal setting was insignificant (chi2=8.7568; p=.271), yet the relationship between engagement and goal setting was significant in weeks 2 and 3 (chi2= 100.318; p=.000). Self-reported cigarettes smoked per day (week 1 versus 2 and 3) declined by 17.7% (week 1 N=2571; week 2 and 3 N=4232.5/2). 58.6% (N=17) smokers had reduced CO readings after 3 weeks and were under.

Conclusion. In this population of smokers who declare they are not interested in quitting, a mobile health smoking cessation intervention did result in daily engagement with the intervention, setting of abstinence goals and a reduced number of cigarettes smoked in 3 weeks. Despite stated intentions not to quit, several smokers were not smoking after 3 weeks per CO validation. Mobile health interventions can engage smokers in smoking cessation trials, even if they initially identify as being not interested in quitting.

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Paper Session 24: Expanding Engagement with Digital Health Tools

11:30 AM-11:45 AM

USE OF AUTOMATED TOOLS TO TEST DIGITAL PRODUCTS AND IMPROVE THE ENGAGEMENT OF A SMOKING CESSATION WEB INTERVENTION

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Introduction: Many health communication programs struggle to evaluate their digital products, primarily due to budgetary or time constraints. Formative and evaluative research on digital interventions are fundamental to improving usability and efficacy. The goal of this study was to use an automated testing tool to assess and enhance the performance of a digital smoking cessation website.

Methods: Smokefree.gov is the National Cancer Institute's smoking cessation website. Using Google Optimize, automated testing software that integrates into Google Analytics, two distinct versions of the Smokefree.gov Homepage were compared in a concurrent A/B test. The "new" homepage was designed to be easier to navigate on mobile devices (than the "original" homepage), and its content offerings were informed by the typical pathways users took on the website (e.g., the sequence of pages users visited). Users visiting the Smokefree.gov Homepage were automatically directed to one of two versions of the Homepage (original homepage or a newly designed homepage). Data was collected over a 16-day period encompassing nearly 14,000 sessions on Smokefree.gov. A set of 12 key performance indicators, collected in Google Optimize and Google Analytics, were examined to determine the better performing Homepage.

Results: The newly designed Homepage outperformed the original design across all engagement metrics (bounce rate: 28% versus 33%, pages per visit: 2.80 versus 2.64, average session duration: 2:45 versus 2:42, time on homepage: 1:14 versus 1:03) for mobile users, which are the primary users of the Smokefree.gov website. Additionally, users who visited the newly designed homepage were more likely to opt-into SmokefreeTXT programs (e.g., .70% versus .06% conversion rate for the Practice Quit text messaging program), a core offering of the Smokefree program.

Conclusion: Automated A/B tests provide a quick and easy way to optimize digital products, free of cost. This study led to the launching of the newly designed homepage on Smokefree.gov and spurred a line of new research studies to optimize user experience and message delivery.

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Paper Session 25: Improving Diabetes Care Among Underserved Populations 10:45 AM-11:00 AM

USING FAITH COMMUNITY ENGAGEMENT TO INCREASE REACH AND IMPACT OF A DIABETES/CVD HEALTH PROMOTION INTERVENTION IN BLACK CHURCHES

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Background. Wide-reaching health promotion interventions are needed in influential accessible community settings to address African American (AA) diabetes and CVD disparities. Yet, rarely are AA community members fully engaged the research process for improved intervention delivery and impact. Using a faith community engaged approach, this study examined feasibility and outcomes of Project Faith Influencing Transformation (FIT), a diabetes/CVD screening, prevention, and linkage to care intervention pilot study to increase weight loss in AA church-populations.

Methods. The urban Kansas City AA faith community identified diabetes/CVD as a priority health promotion focus with weight loss as the primary outcome. Faith leaders then assisted with FIT intervention development, implementation, and evaluation. Key multilevel, religiously-tailored church-based FIT intervention components included: a) self-help print materials (e.g., risk checklists, pledge cards); b) YMCA-facilitated group weekly weight loss classes; c) church service activities (e.g., sermons, responsive readings); and d) text/phone messages to promote healthy eating and physical activity. Six churches were matched/randomized to multilevel FIT intervention or a standard education control arms. At baseline and 8-months, health screenings were held during church services to identify participants at risk for diabetes/CVD, refer them to their church's weight loss class, and link them to needed health services. We assessed feasibility and outcomes with church liaisons' reports on intervention delivery and participants' weight loss and intervention exposure at 8 months.

Results. 352 church members and community members using the churches' outreach ministries were recruited. Participants (mean age=54, SD=13) were primarily female (67%). Most were overweight/obese (86%; mean BMI=33, SD=7.5). Trained church liaisons assisted with weight loss classes and delivered 2–3 FIT materials/activities/month, primarily print materials, text/phone messages, and responsive readings. Intervention participants were significantly more likely to achieve a ≥5-lb weight loss (OR=1.6; CI=1.24, 2.01) than controls at 8 months. Odds of intervention weight loss class participants achieving a ≥5-lb weight loss was 3.6 times more likely than controls (p<.07). Exposure to print materials, text/phone messages, sermons, and pledge cards was significantly related to ≥5-lb weight loss.

Conclusion. AA faith communities can feasibly assist in developing and increasing reach and impact of church-based diabetes/CVD health promotion interventions with intensive weight loss components among at-risk AA church-community populations.

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Paper Session 25: Improving Diabetes Care Among Underserved Populations 11:00 AM-11:15 AM

METABOLIC SYNDEMIC: THE STRESS-DISEASE CONNECTION AMONG RURAL AFRICAN AMERICANS

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Introduction: Mid-life racial and ethnic minorities have disproportionately higher rates of obesity-related chronic conditions compared to their racial counterparts. Conventional frameworks in public health often overlook the interactive effects of social, political, and ecological factors. Human social environments (i.e., social inequality) and socio-genic environmental conditions (i.e., hazards from the built environment) contribute to the clustering of disease. Syndemics theory posits that adverse psychosocial outcomes cluster to negatively impact health outcomes among vulnerable populations. This study uses a syndemic framework to examine disease–disease and social condition–disease interactions of hypertension and obesity among individuals diagnosed with type-2 diabetes.

Methods: Using a phenomenological study design, we interviewed African Americans (N = 27; average age = 65.1 years) with type-2 diabetes (average years of diagnosis = 15.9 years). Participant's demographics were collected and analyzed using descriptive statistics. Interviews were recorded and transcribed and then coded and analyzed using inductive content analysis.

Findings: Narratives were consistent with syndemics theory, indicating that individuals diagnosed with diabetes experienced magnified health-related and socio-environmental burdens. The main themes identified were 1) the intersectionality of co-morbidities and stress, and 2) chronicity of suffering and 3) socio-environmental influences on disease management. The study found that African Americans experience diabetes through a complex social and medical framework.

Conclusion: Using the syndemics approach for understanding the lived experiences of African Americans with type-2-diabetes contributed to a novel perspective of understanding etiologies and socio-environmental factors influencing their health. We propose that increasingly prevalent chronic diseases, like diabetes, which are closely associated with social disparities in health, may function as precursors to psychological and social suffering. A lack of social and economic resources not only discourages positive diabetes management, but may trigger the clustering of co-morbidities and complications.

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Paper Session 25: Improving Diabetes Care Among Underserved Populations 11:15 AM-11:30 AM

SOCIODEMOGRAPHIC AND CLINICAL CORRELATES OF KEY OUTCOMES IN A MOBILE INSULIN TITRATION INTERVENTION FOR UNDERSERVED PATIENTS

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Background: Insulin titration, is typically done face-to-face with a clinician. However, in-person titration can be a burden for patients due to transportation challenges, childcare needs, and lost wages from missing work. Our Mobile Insulin Titration Intervention (MITI) uses basic cell phone technology to help underserved patients with type 2 diabetes find their optimal basal insulin dose (OID), thereby removing the need for in-person clinic visits.

Objective: To evaluate sociodemographic and clinical correlates of reaching OID, text message response rate, and days needed to reach OID.

Methods: Primary outcomes for the present study included: (1) reaching OID (success vs. no success) defined as achieving the dose of once-daily basal insulin required to bring about either a fasting blood glucose (FBG) of 80–130 mg/dL or reaching the maximum dose of 50 units within 12 weeks, (2) having a 100% text message response rate or not, and (3) number of days needed to reach OID. Descriptive statistics were generated for sociodemographic and clinical correlates. Three multivariate regression models were performed. The first two models were logistic regressions to quantify relationships between various correlates and (1) reaching OID or not, and (2) having a 100% text response rate or not. The third model was a negative binomial regression to quantify the relationship between correlates and days needed to reach OID.

Results: The sample included 113 patients with a mean age of 50 years old (SD=10), 45% female, 79% Hispanic, 43% unemployed, and 46% uninsured. Approximately 59% of patients chose Spanish for their text language, while 41% chose English. Across the three regression models, only baseline FBG was significantly associated with the key primary outcomes. Specifically, higher baseline FBG was significantly associated with lower odds of reaching OID (OR=0.991, 95% CI: 0.984–0.999, p-value=0.03), lower odds of a 100% text message response rate (OR=0.993, 95% CI: 0.986–0.999, p-value=0.03), and more days needed to reach OID (RR=1.005, 95% CI: 1.002–1.008, p-value=0.0004). No sociodemographic correlates were associated with outcomes in the regression models.

Conclusions: Patients with higher baseline FBG levels were less successful across all outcomes and may need additional supports in future mHealth diabetes programs. None of the sociodemographic correlates were significant, suggesting that MITI is efficacious across diverse populations.

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Paper Session 25: Improving Diabetes Care Among Underserved Populations 11:30 AM-11:45 AM

EARLY RESULTS OF A CULTURALLY-TAILORED DIABETES RISK REDUCTION INTERVENTION FOR HISPANIC WOMEN

Sonia Vega-López, Ph.D.¹, Nangel M. Lindberg, PhD², Michael C. Leo, PhD³, Mayra Arias-Gastélum, MS¹, Meagan Shaw, MS³, Katherine Vaughn, BA³, Elizabeth Shuster, MS³, Erin S. LeBlanc, MD, MPH³, Ann Turner, MD⁴, Victor J. Stevens, PhD³, Richard T. Meenan, PhD³, Sara Gille, MPH, PMP³

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Background: Hispanic women have the highest estimated risk of developing type 2 diabetes of all ethnic/gender groups in part due to high prevalence of overweight and obesity. Weight loss has become the first-line treatment for overweight diabetic and pre-diabetic patients to improve glycemic control and reduce cardiovascular risk.

Objective: To assess the effects of a culturally-tailored weight-loss behavioral intervention implemented at a Federally Qualified Health Center (FQHC) on weight and cardiovascular risk factors.

Methods: In this two-arm randomized control trial, 200 low-income Hispanic women (age=43.8 ± 10.1 y; weight=86.8 ± 16.5 kg; BMI=36.5 ± 6.5 kg/m²) with diabetes or elevated diabetes risk were randomized to *De Por Vida* or a usual care control group. *De Por Vida* is a 12-month group-based culturally-tailored weight loss intervention based on approaches from successful weight-loss trials with English-speaking populations. Usual care participants received printed materials. Changes in weight, A1c, and fasting blood glucose (FBG) and lipids from baseline to 6-months were compared between groups using generalized estimating equations.

Results: For participants with complete laboratory data (n=197), mean baseline concentrations were 6.5 ± 1.5% for A1c, 134 ± 45 mg/dL for FBG, 183 ± 94 mg/dL for triglycerides, 198 ± 40 mg/dL for total cholesterol, 111 ± 38 mg/dL for LDL, and 47 ± 12 mg/dL for HDL. There was a significant difference in weight loss from baseline to 6-months between arms (-2.9 kg, p<.001), with control participants going from 86.3 kg to 86.0 kg and intervention participants going from 87.2 to 84.1 kg. There were no significant differences in changes in A1c and FBG from baseline to 6-months (-0.18%, p=.24 and -2.0 mg/dL, p=.65, respectively). Though the difference between arms in change in fasting triglycerides from baseline to 6-months was not significant (-22.3 mg/dL, p=.09), the observed change was in the expected direction; control participants had an increase in triglycerides from 184 to 202 mg/dL, whereas intervention participants had a reduction from 181 to 177 mg/dL. There were no significant differences in the change from baseline to 6-months in total cholesterol (2.0 mg/dL, p=.77), LDL (0.3 mg/dL, p=.95) or HDL (1.9 mg/dL, p=.14).

Conclusion: *De Por Vida* has the potential to reduce diabetes risk in this underserved high-risk population in community health centers through achieving successful weight loss.

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Paper Session 26: Social Media and Broadcast Messaging for Health 10:45 AM-11:00 AM

MEDIA BIAS IN U.S. NEWS COVERAGE OF HEALTH POLICY CONTROVERSIES AROUND THE EARLY DETECTION AND PREVENTION OF CANCER

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Background: Public health guidelines promoting the early detection and prevention of cancer are intended to inform health behaviors. Mass media filter information presented on public health practices, thus having a critical position in communicating health recommendations on the early detection and prevention of cancer. We investigate the political bias in U.S. news coverage of the 2009 USPSTF mammography guidelines and state HPV vaccination mandates.

Methods: We analyzed news content to determine the position towards these controversial cancer prevention practices expressed in print news. We compiled a dataset from Lexis Nexis Academic of 650 news articles and opinion pieces from 60 distinct U.S. newspapers on the 2009 USPSTF mammography guidelines and state HPV vaccination mandates debated from 2006–2008. Intercoder reliability met the criterion for Cohen's kappa of greater than or equal to 0.60. We standardized an ideological slant index for newspapers to measure political bias (i.e. conservative or liberal leaning), which categorized 28 newspapers as liberal-leaning and 32 newspapers as conservative-leaning.

Results: News coverage of the 2009 USPSTF mammography guidelines and state HPV vaccination mandates disproportionately mirrored the political attitudes aligned with that news outlet's political leaning. Liberal-leaning newspapers were slightly more likely than conservative-leaning newspapers to publish news supporting the mammography guidelines (22% vs. 17%), but these differences were not statistically significant ($X^2 = 1.23$, $p = 0.54$). Conservative-leaning newspapers (43%) were significantly more likely than reports published in liberal-leaning newspapers (22%) to convey an opposed position towards state HPV vaccination mandates ($X^2 = 9.32$, $p < 0.01$). The types of sources frequently authoring opinion pieces on both health policy controversies significantly differed between conservative-leaning and liberal-leaning newspapers. Researchers/academics were largely unrepresented among the authors of opinion pieces on both controversies.

Conclusions: Political positions towards debated health practices may not be evenly distributed across the media landscape. Working alongside potentially influential sources that differentially appeal to diverging political ideologies could assist in defining messages about health that resonate with multiple segments of the population. We conclude that policymakers and public health agencies that determine and communicate health recommendations may consider developing a political communication and media strategy, especially when government health authorities are involved in contentious health debates.

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Paper Session 26: Social Media and Broadcast Messaging for Health 11:00 AM-11:15 AM

THE RELATIVE PERSUASIVENESS OF NARRATIVE VERSUS NON-NARRATIVE HEALTH MESSAGES IN PUBLIC HEALTH EMERGENCY COMMUNICATION

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Literature shows that narrative health messages are more effective than non-narrative messages in influencing health outcomes. However, this body of evidence does not account for differences in health domain, and little is known about the effectiveness of this strategy in other health domains. In this study, we examined the relative persuasiveness of narrative versus non-narrative message formats in public health emergency communication. Specifically, we examined the relative effectiveness of the two formats in influencing knowledge and perceptions related to pandemic influenza, and determined whether effects of message format vary across population sub-groups. Data for the study come from an experiment fielded in 2013 involving a nationally representative sample of 627 American adults. Participants were randomly assigned to view either a narrative ($n = 322$) or a non-narrative ($n = 305$) video clip containing closely matched information about knowledge and preventive actions related to pandemic influenza, and completed pre- and post-viewing questions assessing knowledge and perceptions related to pandemic influenza. Results indicated that participants in the non-narrative condition reported greater knowledge and rated pandemic influenza prevention measures as more effective compared with those in the narrative condition. Message format effects did not vary across population sub-groups; post-viewing scores of knowledge and perceptions related to pandemic influenza were consistently higher in the non-narrative condition compared with the narrative condition across five socio-demographic groups: age, gender, education, race/ethnicity and income. We concluded that didactic, non-narrative messages may be more effective than narrative messages to influence knowledge and perceptions during public health emergencies.

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Paper Session 26: Social Media and Broadcast Messaging for Health 11:15 AM-11:30 AM

USING TARGETED FACEBOOK AND TWITTER CAMPAIGNS TO RECRUIT AFRICAN AMERICAN ADULTS INTO AN ONLINE ORGAN DONATION INTERVENTION

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There is a need to increase public commitment to organ and tissue donation (OTD), particularly for African Americans (AAs) who are disproportionately represented on organ waitlists. Internet-based, behavioral interventions can be effective, however recruiting AAs for research studies poses unique challenges, particularly for stigmatized health topics such as OTD. The reach and accessibility of social media platforms offer a potentially low cost and efficient way of recruiting participants into interventions, yet developing targeted digital ads is relatively undefined for AA populations. This study tested the effectiveness of targeted Facebook and Twitter campaigns in recruiting AA adults into an online, OTD intervention.

Eligible participants were AA adults in Georgia (GA) who were not registered on the state donor registry. Data mining strategies were informed by previous studies noting altruism, educational attainment, and religion as correlates of AAs' decisions to donate. Facebook and Twitter accounts interacting with pages of historically Black colleges and large churches in GA were identified and used to create an initial target user list. A machine learning model was used to further target by age (18+), location (GA), language (English) and account activity (>20 tweets). A total of 40,000 Twitter and 100,000 Facebook accounts were included in the final targeted user list. Ad campaigns were deployed for a total of 60 days, and directly linked participants to the external study website.

The ad campaigns generated 154,060 impressions, 1,481 clicks and an overall cost of \$1000 (\$.68 per click). A total of 1,021 individuals completed the study eligibility screener, 482 were found eligible (47%) and 245 completed the study (51%). Ad costs averaged \$4.10 per eligible, consented participant who completed the study. The final study sample included 115 participants who indicated that they learned of the study from a personal referral, suggesting a social media network effect.

Our strategy in developing a targeted Facebook and Twitter user list and associated ad campaigns was cost efficient, and effective in recruiting eligible participants into our study. Easy message sharing on social media encouraged snowball recruitment among participants' social networks, and an added bonus of increased participation in our study. More research is needed to determine how to reach AAs about sensitive topics through social media-based recruitment strategies.

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Paper Session 26: Social Media and Broadcast Messaging for Health 11:30 Am-11:45 Am

THE FEASIBILITY OF USING FACEBOOK TO OFFER SOCIAL SUPPORT TO AYA WITH SARCOMA AS PART OF A MOBILE-BASED PSYCHOSOCIAL INTERVENTION

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There is an emerging interest in identifying and meeting the unique needs of adolescents and young adults (AYA) with cancer. Roughly 700,000 AYA are diagnosed with cancer each year in the United States, and the incidence in this cohort has increased steadily over the past 30 years. Recent work has documented significant levels of unmet needs among AYA with cancer, particularly psychosocial challenges during the transition to adulthood, (e.g., abrupt disruption to school and social life, and social isolation). Given that adolescents and young adults drive mobile app use, Facebook may be an ideal way to introduce a social support component to a mobile-phone based psychosocial intervention.

Participants: Seventeen AYA with sarcoma, 7% female; Mean age 19.1 years (range 13–24), recruited from UCLA Pediatric Bone and Soft Tissue Sarcoma Program.

Design and Methodology: A 28-day intervention was created. Organization of the Facebook group involved four steps: (1) Creating a schedule of varied and interactive daily content designed to elicit responses and promote social interaction between participants; (2) Recruiting an advisory board of two AYA cancer survivors to review content; (3) Recruiting a young adult cancer survivor to moderate the Facebook group; (4) Enlisting two research staff members (a clinician and a research associate) to monitor the Facebook group. The Facebook group was an accompaniment to a mobile-phone based mindfulness intervention, delivered through a mindfulness app (Whil Concepts, Inc.), which includes a program for youth called "Grow". Modifications to the existing content included creating a four-week "Mindfulness for Resilience in Illness" program, with 28 relaxation exercises, and the addition of videos featuring two sarcoma survivors as program hosts.

Main findings: Sixteen of 17 people in the group posted at least one reply to the moderator's prompts. On average, participants responded to about half (49.0%) of the moderator's prompts, ranging from 0%–96.8%. Daily response rate ranged from 23.5%–75.0% (average 49.9%). When asked "Would you recommend that this type of online social group be part of a future support program for youth with cancer?", 100% responded "yes." Participants also offered qualitative feedback about ways to improve future online social support programs for AYA.

Discussion: Facebook may be a feasible way to offer social support to AYA with sarcoma as a component of a mobile-based psychosocial intervention.

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CITATION AWARD WINNER
Paper Session 27: Improving Chronic Pain Management
10:45 AM-11:00 AM

COST-EFFECTIVENESS OF YOGA FOR CHRONIC LOW BACK PAIN

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Yoga interventions can improve function and reduce pain in persons with chronic low back pain (cLBP). Using data from a recent trial of yoga for military veterans with CLBP, we analyzed the incremental cost-effectiveness of yoga versus the study comparator. Participants (n=150) had been randomized to either 2x weekly, 60-minute yoga sessions for 12 weeks, or to a delayed treatment (DT) control receiving usual care. Outcomes were measured at 6 weeks, 12 weeks, and 6 months. Clinically meaningful improvement (CMI) was defined as a 30% improvement on the Roland-Morris Disability Questionnaire (RMDQ). Preference-based quality of life was measured using the EQ5D scale. Actual intervention costs including personnel, materials, and transportation were tracked during the study. Health care utilization and costs were estimated using self-reported use of back pain-related health services and adverse events. The analysis used a 1-year time horizon and a healthcare organization perspective. Outcomes were compared using a multivariable random effects model controlling for covariates. At 6-months, 43 (57%) yoga participants had a CMI compared with 18 (24%) of the DT group (p = 0.003). The yoga group had significantly greater increases in EQ5D scores than the DT group (mean change difference = 0.063; p = 0.047). Adjusting for lead-in effects and diminishing effects from 6- to 12 months, QALYs gained over 1 year were estimated as 0.041. Total intervention costs including estimated overhead were \$550 per yoga participant and \$85 per DT participant. Health care costs were assumed to be equal based on very similar utilization and AE data. The incremental cost-effectiveness ratios (ICERs) were \$1,395 per clinically improved patient at 6-months, and \$11,341/QALY over one year. To adjust for inflated intervention costs resulting from conducting an RCT in a limited timeframe, a sensitivity scenario estimated that costs for an ongoing yoga intervention could be delivered at about half the cost, or \$287/participant. In this scenario, ICERs are lowered to \$606 per clinical improvement at 6-months, and \$4,927/QALY. The results suggest that yoga, which is typically delivered in a group format, is a relatively low-cost intervention and has a favorable cost-effectiveness ratio. Using intent-to-treat data, yoga was delivered for about \$23 per session/participant and has been shown to produce equivalent benefits to physical therapy which is often reimbursed at \$100 per 60-minute session.

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Paper Session 27: Improving Chronic Pain Management
11:00 AM-11:15 AM

ACCEPTABILITY AND FEASIBILITY OF HATHA YOGA FOR CHRONIC PAIN IN PATIENTS RECEIVING OPIOID AGONIST TREATMENT

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Chronic pain is a significant problem for more than half of people receiving opioid agonist treatment (OAT) for opioid use disorder (OUD). Given its efficacy in reducing pain interference or pain severity in other pain populations, hatha yoga may be a useful adjunctive treatment people taking OAT. In order to create a yoga program, we conducted 4 focus groups with people (n=24) enrolled in OAT. They provided feedback: they were interested in yoga as a way to cope with chronic pain, but any class should be very gentle and not more than one hour in length. We adapted existing yoga programs for pain to develop a manualized, 12-week hatha yoga class series to take place at the drug treatment program. The yoga was gentle and chair-based, with focus on slow meditative movements. We then conducted a pilot RCT of yoga (n=5) compared to a health education contact control (n=5) in a cohort of people receiving OAT. We compared our results to a priori benchmarks for feasibility and acceptability. We recruited 10 participants in 6 weeks, exceeding our target recruitment rate. We completed an endpoint assessment at 3 months on all 10 participants. There were no serious adverse events related to study participation. Self-report measures of credibility, acceptability, and satisfaction all exceeded pre-set cut-off for both conditions. However, we did not meet the benchmark set for class attendance – i.e., that 70% of participants would attend 8 out of 12 possible classes. In the yoga group, 2 of 5 participants met the target, whereas in the health education arm, 3 of 5 did. We used qualitative data to understand the reasons for poor attendance. In the yoga arm, one woman stopped attending class due to an exacerbation of back pain and subsequent fear of movement. A second person was unable to attend classes due to health problems such as influenza and gastrointestinal distress. The third person attended one class but then stated that yoga was not a good match for him, noting that he felt pain while engaging in some of the postures. In contrast, the two men who did attend class regularly expressed strong enjoyment of class, reported regular home practice, and had decreased pain interference or decreased pain severity. Thus, fear of pain may contribute to poor attendance at yoga classes in this population. We are modifying our intervention to address this concern in our next pilot RCT.

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Paper Session 27: Improving Chronic Pain Management 11:15 AM-11:30 AM

CHRONIC PAIN SYMPTOMS AND WELL-BEING IN MIDLIFE: EVIDENCE FROM THE NATIONAL LONGITUDINAL STUDY OF HEALTH AND WELL-BEING

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More than 100 million Americans suffer from chronic pain, which is four times than people with diabetes and 10 times more than cancer patients (Institute of Medicine Report, 2010). Despite a large body of research suggesting that chronic pain is related to physical and psychological illness (Boonstra et al., 2013; Estevez-Lopez et al., 2015; McNamee & Mondolia, 2014), little is known about the longitudinal association between chronic pain and psychological health, including the impact of recurring symptoms of chronic pain on an individual's well-being. Likewise, little is known about the association between chronic pain and positive psychological functioning as well as the bidirectional relationship between the two.

This study aims to extend this line of research using two waves of national longitudinal data collected 9 to 10 years apart (Midlife Development in the United States (MIDUS)-II and III dataset). We tested three models: The cross-sectional relationship between chronic pain symptoms, well-being and psychological distress in MIDUS-III, second, longitudinal bidirectional effects of chronic pain symptoms on well-being and psychological distress, and third, the longitudinal relationship between recurring chronic pain symptoms at two time points 10 years apart and well-being. We included only participants who experienced pain in both time points. This resulted in 473 adults (61.1% women, 38.9% men). Ages ranged from 34 to 84 ($M = 56.34$, $SD = 10.71$) at MIDUS-II.

Multiple-group longitudinal structural equation modeling analyses revealed evidence for significant negative association of chronic pain symptoms and SWB and EWB. In addition, chronic pain symptoms at Time 1 were found to be a significant predictor of future EWB ($B = -.078$, $SE = .036$, $p = .030$). When examining the cross-lagged paths, significant negative associations were found between recurring pain and SWB at Time 2 for both gender ($B = -.086$, $SE = .024$, $p < .001$) and between recurring pain and EWB at Time 2 for women ($B = -.065$, $SE = .023$, $p = .004$). Recurring pain was also positively related to distress for both genders ($B = .094$, $SE = .027$, $p < .001$).

Findings suggest that chronic pain symptoms have a strong negative relationship to individuals enjoying life and perceiving that one has a meaningful life. Additionally, the experience of recurrent chronic pain symptoms at 2 time points is particularly detrimental to one's well-being. Implications for research and practice are discussed.

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Paper Session 27: Improving Chronic Pain Management 11:30 AM-11:45 AM

FREQUENCY, CONSISTENCY AND CORRELATES OF PHYSICAL ACTIVITY-RELATED PAIN WORSENING DURING MIGRAINE ATTACKS

Samantha G. Farris, Ph.D.¹, J. Graham Thomas, PhD², Ana Abrantes, Ph.D.³, Richard Lipton, Jelena Pavlovic, MD/PhD⁴, Todd Smitherman, PhD⁵, Megan Bennett. Irby, PhD⁶, Donald B. Penzien, PhD⁷, Julie Roth, MD⁸, Kevin C. O'Leary, MS⁹, Dale S. Bond, PhD¹⁰

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Background: Migraine is a neurological disease involving recurrent attacks of moderate-to-severe and often disabling head pain. Worsening of pain with routine physical activity (PA) during attacks is a migraine defining symptom; however, the frequency, individual consistency, and correlates of this symptom are unknown. Given potential of this symptom to undermine daily PA and exercise participation, an effective migraine prevention strategy, further research is warranted. The current study is the first to prospectively evaluate 1) frequency and individual consistency of PA-related pain worsening during migraine attacks, and 2) potential correlates, including other migraine symptoms, anthropometric characteristics, psychological symptoms, and daily PA.

Methods: Participants were women ($n=132$) aged 18–50 years with neurologist-confirmed migraine and overweight/obesity ($BMI=25.0–49.9$ kg/m²) seeking treatment to lose weight and reduce their headaches in the Women's Health and Migraine (WHAM) trial. At baseline, participants used a smartphone diary to record migraine attack occurrence, severity, and symptoms (i.e., worsening of pain with activity, photophobia, phonophobia, and nausea) for 28 d. Participants also completed questionnaires and 7 d of objective PA monitoring before and after diary completion, respectively. Patterning of PA's effect on pain was summarized within-subject by calculating the proportion (%) of attacks in which PA worsened, improved, or had no effect on pain.

Results: Participants reported 5.5 ± 2.8 (mean \pm SD) migraine attacks over 28 d. The intraclass correlation coefficient ($ICC=.71$) indicated high consistency in participants' report of PA-related pain worsening or not. On average, PA worsened pain in $34.8 \pm 35.6\%$ of attacks, had no effect on pain in $61.8 \pm 34.6\%$ of attacks and improved pain in $3.4 \pm 12.7\%$ of attacks. Few participants (9.8%) reported PA-related pain worsening in all attacks. Attacks where PA worsened pain were associated with more severe nausea, photophobia, phonophobia, and allodynia ($r^2=.18-.22$, $p's<.05$). Pain worsening due to PA was not related to psychological symptoms or total daily PA.

Conclusions: There is large variability in the impact of PA on pain during migraine attacks that can be accounted for by individual differences. For a minority of participants, PA consistently contributed to pain worsening. More frequent PA-related pain worsening was related to greater severity of other migraine symptoms and pain sensitivity, which supports the validity of this diagnostic feature.

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Paper Session 28: Extending the Reach of Mindfulness-Based Approaches for Improving Health

11:15 AM-11:30 AM

POTENTIAL BENEFITS OF MIND-BODY PRACTICES FOR COLORECTAL CANCER: PRELIMINARY RESULTS FROM A RANDOMIZED-CONTROLLED TRIAL

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Background: Depression and anxiety symptom are risk factors to psycho-social-spiritual well-being of cancer survivors. Mind-body practices, such as mindfulness-based stress reduction program and Qigong practice have reported potential benefits in alleviating depressive and anxiety symptoms. This study explores the comparative benefits of a mindfulness-based self-compassion training and a qigong training in improving depressive and anxiety symptoms of colorectal cancer. This study presented the preliminary results of an ongoing study of colorectal cancer patients.

Methods: The present study adopts a randomized-controlled trial study design. Participants are colorectal patients diagnosed of Stage I, II, III and non-metastatic colorectal cancer, who had completed primary treatment at least 6 months ago, but not more than 5 years. Participants were randomly assigned to a mindfulness group, qigong group, and a wait-list control group. All participants surveyed on an inventory of depressive symptoms at baseline and 8 weeks later. A total of 54 participants had completed the study in this ongoing study.

Results: Primary data analysis reported significant *Time x Group* difference between the three conditions. Post-hoc repeated measures ANOVAs demonstrated the 8-week mindfulness-based self-compassion training has a statistically significant effect on depressive symptoms with compared with the control ($F(1, 38) = 4.47, p \leq .05$), as well as with the banduanjin group ($F(1, 33) = 4.98, p \leq .05$); and that the mindfulness-based self-compassion training reported the most reduction in depressive mood among the three groups. However, the preliminary data reported no significant *Time x Group* difference on the measure of anxiety ($F(2, 49) = .70, p = .499$).

Conclusions: Preliminary data suggested that both mindfulness-based self-compassion training and qigong practice are effective in reducing depressive symptoms of colorectal cancer survivors, when compared with the wait-list control. However, their effectiveness in improving anxiety symptoms remained inconclusive. This ongoing study targets to recruitment a total of 198 colorectal cancer survivors, with a larger sample size this study will contribute to our knowledge in psycho-social intervention in the field of psycho-oncology.

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MERITORIOUS AWARD WINNER

Paper Session 28: Extending the Reach of Mindfulness-Based Approaches for Improving Health

11:30 AM-11:45 AM

BRIEF STRESS MANAGEMENT INTERVENTIONS REDUCE RAGE-ASSOCIATED S100A8/A9 LEVELS IN BREAST CANCER PATIENTS

Chloe Taub, M.A.¹, Hannah M. Fisher, B.S.¹, Erica R. Nahin, B.A., B.S.¹, Bonnie B. Blomberg, Ph.D.², Marc E. Lippman, MD³, Barry I. Hudson, PhD³, Alain Diaz, Ph.D.⁴, Suzanne Lechner, PhD⁵, Tae Kyoung Kwak, PhD³, Gyong Ha Hwang, B.S.³, Charles S. Carver, PhD¹, Michael H. Antoni, PhD¹

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INTRODUCTION. Women undergoing treatment for breast cancer often experience heightened inflammation and increased inflammation has been linked to poorer disease outcomes. The s100 protein family plays an important role in the inflammatory response through interaction with the receptor for advanced glycation end products (RAGE), and has been identified as a biomarker for breast cancer due to associations with tumor development and metastasis. Prior work has demonstrated the ability of stress management interventions to reduce levels of leukocyte inflammatory gene expression and circulating cytokines in women undergoing treatment for breast cancer; however, the impact of such interventions on s100A8/A9 has yet to be examined.

METHODS. Breast cancer patients (Stage 0 – IIIb) who were 4 – 10 weeks post-surgery but had not yet started adjuvant therapies (mean age = 54.28) were enrolled and randomized to one of three 5-week intervention conditions: cognitive behavioral training (CB), teaching cognitive restructuring and interpersonal skills; relaxation training (RT), teaching muscle relaxation, deep breathing, and imagery exercises; or attention-time matched health education control (HE). At baseline and at 12-months follow-up, 121 women provided blood samples from which s100A8/A9 levels were determined by ELISA. We hypothesized that participants assigned to either the CB (N = 41) or RT (N = 36) condition (CBRT) would show significant decreases in s100A8/A9 over the first year of primary treatment compared to the HE (N = 44) condition.

RESULTS. A 2 (Condition: CBRT, HE) by 2 (Time: T1, T4) general linear model repeated measures analysis controlling for age, stage of cancer, time since surgery, chemotherapy treatment, and radiation treatment revealed a significant effect of condition on s100A8/A9 levels from T1 to T4, $F(6, 114) = 4.363, p = .039$, with s100A8/A9 in CBRT reducing over time compared to HE.

CONCLUSION. These results suggest that brief group-based stress management programs teaching either cognitive behavioral or relaxation techniques may reduce levels of the RAGE-associated s100A8/A9 ligand in women with breast cancer during the first 12 months of primary treatment. Future work should investigate how changes in this biomarker in the present cohort relate to longer-term disease outcomes.

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Paper Session 29: Increasing Understanding of Neurocognitive Function, Cognition and Behavioral Health

10:45 AM-11:00 AM

EFFECTS OF PHYSICAL ACTIVITY ON QUALITY OF LIFE IN YOUNGER VS OLDER BREAST CANCER SURVIVORS: ROLES OF COGNITION AND MENTAL HEALTH

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In the present study, we examined the roles of cognitive function and mental health along the pathway from physical activity to global quality of life (QoL) in younger (less than 60 years-old) versus older (60+ years-old) breast cancer survivors (BCS). We hypothesized a direct effect of physical activity on cognitive function and indirect effects of physical activity on mental health and QoL.

BCS (n=167 young, M age=50.92 \pm 6.85 years; n=133 old, M age=65.92 \pm 4.58 years) wore an accelerometer for seven consecutive days to measure their physical activity and completed iPad-based cognitive tests and questionnaires assessing their executive function (Flanker incongruent reaction time, Mazes drawing time, Task-Switch switch reaction time, Trails B time), demographics, breast cancer history, mental health (Hospital Anxiety and Depression Scale, Pittsburgh Sleep Quality Index [daytime dysfunction]), and QoL (Functional Assessment in Cancer Therapy–Breast [FACT-B], Satisfaction with Life Scale [SWLS]). Structural equation modeling was used to create latent factors representing executive function and mental health and to compare the hypothesized pathway from physical activity to QoL between young and old BCS. Models were adjusted for overweight/obesity status and months since diagnosis.

In the full sample, more daily minutes of moderate-to-vigorous physical activity (MVPA) were associated with faster performance on executive function tasks ($\beta=-.21, p=.003$), which was associated with greater mental health ($\beta=.21, p=.01$). Greater mental health was, in turn, related to greater QoL on the FACT-B ($\beta=.93, p<.001$) and SWLS ($\beta=-.75, p<.001$). Further, the indirect effects of MVPA and executive function on FACT-B and SWLS were significant (all $p<.04$). The indirect effect of MVPA on mental health was also significant ($p=.04$). However, when comparing age groups, effects were evident in young BCS only. Among older BCS, only the direct pathways from mental health to FACT-B ($\beta=-.91, p<.001$) and SWLS ($\beta=-.76, p<.001$) were significant.

Physical activity interventions targeting cognitive function may also confer mental health and global QoL benefits in younger BCS. However, as the vast majority of BCS are ≥ 60 years-old and likely facing age- and cancer-related symptoms, further efforts are needed to: (1) understand the long-term trajectory of QoL in BCS; (2) identify factors that explain differences observed between age groups; and (3) test physical activity interventions aimed at improving cognitive function, mental health, and QoL in BCS.

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Paper Session 29: Increasing Understanding of Neurocognitive Function, Cognition and Behavioral Health

11:00 AM-11:15 AM

SUBSTANCE ABUSE AS A MODERATOR OF NEUROCOGNITIVE FUNCTIONING IN OLDER ADULTS WITH HIV

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Substance Abuse as a Moderator of Neurocognitive Functioning in Older Adults with HIV

Background: As HIV treatments continue to improve, people with HIV are living longer, healthier lives. However, HIV-associated neurocognitive disorders (HAND) remain a common health burden, and disentangling the precipitating and perpetuating factors of HAND – specifically, the role of substance abuse – presents a complex challenge for research. The present study aims to explore the association between substance abuse and neurocognitive functioning in older adults with HIV.

Method: A total of 107 older (≥ 50 years of age) HIV-positive adults with chronic drug and alcohol issues completed neuropsychological testing as well as self-administered surveys. Digit Span Forward (DF) and Backward (DB) tasks assessed working memory, and D-KEFS Trails 2–4 (number and letter sequencing tasks) measured cognitive flexibility. Drug and alcohol disorders were evaluated with the Drug Abuse Screening Test (DAST) and the Alcohol Use Disorders Identification Test (AUDIT), respectively.

Results: The sample had a mean age of 54.8 ($SD=4.1$) and was largely comprised of unemployed (83.5%), low-income (82.5%) men (67.0%) of color (90.3%). On average, participants had been living with HIV for 17 years ($SD=7.1$). Bivariate analyses revealed correlations between AUDIT and DB scores ($r = -.20, p = .05$), while DAST scores correlated with DF scores ($r = -.21, p = .03$) and number sequencing errors ($r = -.22, p = .02$). When adjusting for demographic covariates and the other neuropsychological test scores, regression analysis showed continued, independent effects of DF scores ($\beta = -.26, p = .03$) and number sequencing errors ($\beta = -.25, p = .03$) on DAST scores, while the impact of DB scores on AUDIT were no longer significant.

Conclusions: These results suggest that substance abuse is highly interrelated with neurocognitive impairment in aging HIV-positive adults. More severe alcohol problems were associated with poorer DB performance, whereas more severe drug problems were associated with lower DF recall, indicating that different substances may differentially affect executive functioning domains. This study adds to growing evidence that substance abuse is related to neurocognitive decline, but future research is needed to measure the nature and magnitude of this relationship. Improved understanding of the association between substance abuse and neurocognitive impairment in aging HIV-positive adults will ultimately help facilitate improved prevention and treatment strategies for HAND.

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Paper Session 29: Increasing Understanding of Neurocognitive Function, Cognition and Behavioral Health 11:15 AM-11:30 AM

CROSS-SECTIONAL PREDICTORS OF NEUROCOGNITIVE AND PHYSICAL FUNCTION IN OLDER WOMEN WITH HIV INFECTION USING THE WIHS

Veronica Njie-Carr, PhD¹, Katherine Holmes, MPH, MPS², Shijun Zhu, PhD³, Kristen Stafford, PhD, MPH⁴, Seth Himelhoch, MD, MPH⁴, Eun-Shim Nahm, PhD, RN, FAAN¹, Anjali Sharma, MS, MS⁵, Tracey E. Wilson, PhD⁶, Joel Milam, PhD⁷, Michael Plankey, PhD⁸, Mardge Cohen, MD⁹, Weiqun Tong, M.S.¹⁰, Anna Rubtsova, PhD, MA, MSc¹¹, Margaret Fischl, MD¹², Deborah Konkle-Parker, PhD, FNP, FAAN¹³, Deborah Gustafson, New York¹⁴

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Life expectancy for people living with HIV has increased because of highly effective antiretroviral medications. The long-term effects of these medications and inflammatory changes associated with HIV infection in older adults result in cellular changes that can impact physical performance and neurocognitive function. This analysis explored cross-sectional predictors of neurocognitive function (NCF) and physical function (PF) among Black and non-Black women 50 years and older. Based on the Socio-Ecological Model, multiple analytic procedures were conducted. Bivariate regression analyses of NCF and PF included: age, history of sexual abuse, social isolation, socio-economic status, depressive symptoms, substance use, alcohol use, and social support. PF was measured using the Lawton Instrumental Activities of Daily Living (IADL) scale. NCF was measured using a battery of eight tests. The sample comprising these analyses included: 612 HIV women (HIV+, n=440; 231 Black, 209 non-Black) and at-risk HIV- (n = 172; 110 Black, 62 non-Black). Blacks who were HIV+ had slightly higher mean PF scores, but they were not statistically significant. HIV+ Black women demonstrated poorer verbal learning and memory compared to HIV+ non-Blacks (30.22 vs 28.30, $p < .05$). No direct associations were found between key predictors and the PF and NCF outcomes. Among Blacks who were HIV+, number of comorbidities, and substance use contributed to limitations in PF yet accounted for only 4% of the variance. Black women who reported being isolated ($\beta = -0.01$) and drinking more alcohol ($\beta = -0.006$; interaction: $\beta = 0.002$, $p < .05$) had worse IADL. In terms of NCF, among Black HIV+ women, substance use predicted verbal ability ($\beta = -10.7$), working memory and attention ($\beta = -4.89$), psychomotor speed and information processing ($\beta = -1.79$) and reading level and learning ability ($\beta = -11.01$). Alcohol use was associated with attention and executive function ($\beta = -.001$, $pp = .05$). While findings were inconclusive among HIV- women, significant associations were observed in HIV+ women. Among this group of aging HIV+ Black women, substance and alcohol use, depressive symptoms, current smoking, and number of comorbidities are important considerations when designing behavioral interventions to maximize overall physical and neurocognitive functional abilities.

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CITATION AWARD WINNER Paper Session 29: Increasing Understanding of Neurocognitive Function, Cognition and Behavioral Health 11:30 AM-11:45 AM

LIFESTYLE MODIFICATION AND NEUROCOGNITION: EXAMINING THE INFLUENCE OF NORADRENERGIC FUNCTION

Patrick J. Smith, PhD, MPH¹, Andrew Sherwood, PhD¹, Alan Hinderliter, MD², James Blumenthal, PhD¹

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Background: Cardiovascular risk factors (CVRF) have been associated with increased risk of cognitive impairment, with particularly detrimental effects on tests of frontal lobe functioning (e.g. Executive Function and Working Memory).¹ Although CVRF are believed to increase risk of cognitive impairment through microvascular damage, many individuals with elevated microvascular burden do not develop impairments, suggesting that additional, indirect neural mechanisms may play an important role in maintaining cognitive health. Central nervous system catecholamine levels are strongly associated with cognition,² integrally tied to frontal lobe structures adversely impacted by CVRF, and correlate with cognitive changes following pharmacotherapy.³ We therefore examined the associations between CVRF, catecholamines, and cognitive function in a previously published randomized trial consisting of 133 middle-aged, overweight or obese adults with CVRF participating in a 6-month lifestyle intervention.^{4,5}

Methods: Participants with high blood pressure were randomized to Weight Management (WM, n = 55), Exercise (EX, n = 54), or a Usual Care control (UC, n = 24). Prior to randomization and again following 6-months of treatment, participants underwent testing of Executive Function (Trail Making Test and Digit Symbol Substitution Test) and Working Memory (Digit Span Forwards and Backwards); additional assessments included CVRF using the American Heart Association 10-year ASCVD risk score and 24-hour urinary assessment for catecholamines including dopamine (DA) and norepinephrine (NE). Statistical analyses controlled for age, gender, ethnicity, education, and body surface area (catecholamines only).

Results: Greater baseline CVRF ($\beta = -0.24$, $P = .007$) and higher NE ($\beta = -0.21$, $P = .024$) were associated with poorer Executive Function, and greater CVD risk was associated with higher NE ($\beta = 0.20$, $P = .031$). In addition, greater BMI levels were associated poorer Working Memory ($\beta = -0.18$, $P = .036$), higher DA ($\beta = -0.31$, $P < .001$), and tended to be associated with higher NE ($\beta = -0.14$, $P = .073$). Participants in the WM and EX groups showed reductions in CVRF, which were associated with decreased NE ($\beta = -0.19$, $P = .047$). Although we did not observe a treatment main effect for cognitive performance,⁵ the effects of treatment on Working Memory were moderated by baseline NE levels ($P = .008$), such that participants with higher NE experienced additive benefits in the WM and Ex groups experienced compared with Usual Care (Figure 1). In addition, improvements in Working Memory were associated with reduced peripheral levels of DA ($\beta = -0.13$, $P = .038$) and tended to be associated with reduced SBP ($\beta = -0.12$, $P = .070$).

Conclusions: Peripheral catecholamine levels are associated with both CVRF and cognitive function. Improvements in cognitive function following lifestyle modification may depend on baseline levels of catecholamines.

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Paper Session 30: Towards Precision Behavioral Medicine: Advancing Analytic Techniques 10:45 AM-11:00 AM

PERSONALIZED MEDICATION ADHERENCE DIGITAL INTERVENTIONS

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Care4Today® Mobile Health Manager is a commercial medication management mobile app developed by Janssen Healthcare Innovation part of Johnson & Johnson Health and Wellness Solutions. It's been commercially available for four years and generated enormous amount of users' medication adherence data. There are 124,742 registered users globally with reminders for 525,552 medications. The application delivered digital interventions, Behavior Change Techniques (BCTs), viz., Action Planning, Prompt-Cues, Social Support Incentive, and Social Support Reward.

We selected last six months of data in the app, which included 6,694 medications for 1,524 patients with a total number of 721,964 records for analysis. The data includes user interactions with the app, and the medication adherence behavior, a sequence of "taken" or "missed" over time. It's worth noting that some BCTs are optional while the others are mandatory. Among optional BCTs, we find adherence behaviors of users with family support is statistically different from that of users without.

Our interest is to Personalize the BCT's to create a broader impact. Therefore, we have used Machine Learning techniques to discover patterns of behaviors, and their relation to BCT exposures and the determinants of behaviors. Unsupervised learning technique is applied on the features, such as basic statistics, polynomial-fit coefficients, and wavelet coefficients derived from adherence behavior to discover subgroups of users. In each subgroup, we look for insights about users' medication adherence and the performance of BCTs. With these insights, we inform the product design and tailor BCTs to target subgroups to improve the behavior.

In addition to pattern analysis, we developed a predictive model using Random Forest Classifier to predict the outcome of next dose, whether missed or taken. We achieved over 0.9 AUC score with bootstrapping. The advantage of predicting a potential miss, in advance, will help us to maximize health outcome by adapting intervention in time. Additionally, we are also building causal model to understand the determinants of poor adherence behavior using Big Data technology.

Overall, the research aims at using machine learning techniques to build a data-driven health behavior advanced analytic loop. We will continue to develop further by leveraging well established statistical techniques and new machine learning algorithms, including deep learning.

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Paper Session 30: Towards Precision Behavioral Medicine: Advancing Analytic Techniques 11:00 AM-11:15 AM

ANALYSIS OF A HYPERTENSION BEHAVIORAL TRIAL INCORPORATING NEWLY RECOMMENDED MISSING DATA METHODS

Stephanie Rettig, MPH¹, Sundar Natarajan, MD, MSc², Binhuan Wang, PhD¹

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Background: Missing data, a common issue in clinical trials, can compromise study inferences. In order to obtain valid conclusions, it is important to use appropriate missing data methods in the analysis. Recently, formal recommendations on analysis have been disseminated but few behavioral trials report results using them.

Purpose: To use recommended missing data methods to analyze a 3-arm randomized controlled trial that evaluated two behavioral interventions among patients with uncontrolled blood pressure (BP).

Methods: We compared the effectiveness of the behavioral stage-matched intervention (SMI) or a non-tailored health education intervention (HEI), to the usual care (UC) group with the traditional complete case method, and two missing data methods: missing at random using multiple imputation and sensitivity analysis using a pattern mixture model. The outcome measures were systolic BP (SBP) or BP control. Since we were comparing 2 interventions, the Bonferroni-corrected p-value to achieve statistical significance was 0.025.

Results: A total of 533 subjects were randomized in this study: 176 in SMI, 180 in HEI, and 177 in UC. At the 6-month follow-up, there were 22 missing values for the outcome measure in SMI, 12 in HEI, and 18 in UC. Compared to UC, SMI led to a lower SBP at 6 months by 3.51 mmHg (CI -6.16, -0.87) for the complete-case analysis ($p = 0.0093$), by 3.28 mmHg (CI -6.26, -0.31) using the missing at random by multiple imputation ($p = 0.0310$) and by 3.52 (CI -6.20, -0.84) for the pattern mixture model ($p = 0.0101$). The odds of having better BP control at 6 months were significantly greater in SMI compared to UC with an odds ratio (OR) of 2.16 (CI 1.39, 3.35) for the complete case ($p = 0.0008$), OR 2.32 (CI 1.52, 3.54) for missing at random by multiple imputation ($p = 0.0001$) and OR 2.02 (CI 1.32, 3.09) for the pattern mixture model ($p = 0.0013$). HEI did not lead to lower SBP or have better BP control at 6 months compared to UC using the complete-case analysis, the missing at random by multiple imputation or using the pattern mixture model (all p-values > 0.025).

Conclusions: The traditional complete-case analysis and the recommended missing data methods, the missing at random by multiple imputation and pattern mixture model are valuable complementary approaches for analyzing missing data in clinical trials. Missing data methods should be utilized more frequently within clinical trials in order to provide robust study inferences.

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Paper Session 30: Towards Precision Behavioral Medicine: Advancing Analytic Techniques 11:15 AM-11:30 AM

USING NATURAL LANGUAGE PROCESSING TO UNDERSTAND THE ANTECEDENTS OF BEHAVIOR CHANGE

April Carcone, PhD¹, Alexander Kotov, PhD², Mehedi Hasan, MI², Ming Dong, PhD², Susan Eggly, PhD³, Kathryn Hartlieb, PhD⁴, Gwen Alexander, PhD⁵, Mei Lu, PhD⁵, Sylvie Naar, PhD⁶

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Motivational Interviewing (MI) is a communication framework to increase intrinsic motivation for behavior change. There is strong empirical evidence linking patient motivational statements (i.e., “change talk”) to behavior change. A growing evidence base supports the link between “MI-consistent” provider behaviors and patient change talk, but the specific provider behaviors responsible for the elicitation of patient change talk are less clear. The Minority Youth Sequential Coding of Process Exchanges (MYSCOPE) is a code scheme to characterize communication during MI. MYSCOPE coding is iterative and resource-intensive; thus, its utility is limited. Rapid development of artificial intelligence techniques (e.g., machine learning) allows the automation of time-consuming cognitive tasks, such as behavioral coding. We examined the feasibility of machine learning-based classification models to identify communication behaviors in 38 transcribed audio-recordings from weight loss counseling sessions with African American adolescents with obesity and their caregivers. Eight models were tested and the Support Vector Machines (SVM) model demonstrated the best performance in recognizing MYSCOPE behaviors based on lexical features with 70.8% accuracy (%correct/all codes), 70.5% precision (%correct within code), and 70.8% recall (true positive rate) of adolescents’ statements. Analysis of caregiver statements was similar at 66.4% accuracy, 65.3% precision, and 66.4% recall. The addition of contextual (previous code) and semantic (Linguistic Inquiry and Word Count dictionaries) features improved model performance to 75.1% accuracy, 75.0% precision, and 74.2% recall of adolescents’ statements and 73.8% accuracy, 73.3% precision, and 73.8% recall of caregivers’ statements, accuracy comparable to that of human coders ($k_{SVM}/human=.696-.715$ vs $k_{human}/human=.696$). We then validated the model using a data set composed of 80 medical encounters with young adults with HIV. The HIV model achieved 68.8% accuracy, 66.3% precision, 68.8% recall, and $k_{SVM}/human=.628$ vs $k_{human}/human=.715$. Limitations of the HIV validity sample included a smaller data set (i.e., fewer model training examples) and semantic differences between weight loss counseling sessions and HIV medical care visits. These findings demonstrate the utility of machine learning-based classification models to perform the complicated cognitive task of behavioral coding. This technology has the potential to dramatically accelerate the pace of behavioral science research to test intervention theory and improve clinical efficacy by facilitating intervention tailoring to discrete populations. Ultimately, these methods could greatly extend the reach of behavioral medicine via automated, real-time counseling.

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Paper Session 30: Towards Precision Behavioral Medicine: Advancing Analytic Techniques 11:30 AM-11:45 AM

REVEALING MEANINGFUL ENGAGEMENT IN MHEALTH INTERVENTIONS USING MACHINE LEARNING

Angela F. Pfammatter, PhD¹, Robert Bell, Senior Undergraduate (B.S. in Electrical Engineering)², Nabil Alshurafa, PhD³, Bonnie Spring, PhD³

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Decreased engagement with mHealth interventions over time is a significant barrier to sustained behavior change effects. While increasing and maintaining engagement over time has received much attention, the hallmarks of what constitutes effective engagement have not been clearly defined. Technology has advanced as of late such that participant behaviors such as opening an application, clicking a button, entering information, and use time can be tracked and analyzed to gain further insight into how and when participants use an app. Further, these actions over time can be linked to outcomes so as to define patterns of what could be considered effective engagement. The NUYou trial recruited 303 freshmen who were asked to use a smartphone application designed to promote and improve 4 health behaviors. Participants were randomized to a cardiovascular health (CVH) group focused on smoking, physical activity, weight, and diet or a whole health (WH) group focused on hydration and sun, sex, and travel safety. The app asked participants about their level of their target behaviors as well as stress and happiness on a weekly basis. For the purpose of defining patterns of engagement, we analyzed 26 consecutive weeks of app use for all participants. Results of unsupervised k-means clustering of weeks of use indicated that 7 distinct weekly time series patterns emerge which generally centered around a primary day of week use. Clustering of app use demonstrated stark differences between groups, thus, for the purpose of defining effective engagement, the CVH group was analyzed. 4 clusters of participants emerged: healthy and steady; unhealthy and steady; decliners, and improvers. Clusters that were more behaviorally static had higher density of short interventions (49% and 51% of participants in healthy steady and unhealthy steady, respectively) compared to the more variable clusters (38%). Those clusters exhibiting more positive health behaviors used the app approximately 2 more times per week than the clusters that did not. Improvers demonstrated a pattern of engagement with high overall use ($M=17.49$ seconds) where interaction times were longer per use (7–61 seconds per use) compared to the declining cluster that had high overall use ($M=18.06$ seconds) but with interaction times shorter per use (0–7 seconds per use). This is indicative of a pattern consistent with use spent more in reviewing information or feedback on the app, rather than simply checking, glancing, or brief self-monitoring as more conducive to positive behavior change. These results suggest that total app use time is not a reasonable target for interventions, but rather reviewing progress or reflecting on feedback is an important mediator of proximal behavior change. These findings will be discussed as having important implications for passive sensing technologies and design of mHealth interventions.

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Panel Discussion 16 12:45 PM-1:45 PM**HARNESSING DESIGN THINKING TO ENHANCE BEHAVIORAL INTERVENTIONS**

Molly L. Tanenbaum, PhD¹, Jessica Y. Breland, PhD², Myra Altman, PhD³, Sara F. Krugman, MA, BA⁴, Bryan Gibson, DPT, PhD⁵, Leah Yingling, BS⁵, Lisa S. Miller, PhD⁶, Olga Perski, BSc, MSc⁷, Korey K. Hood, PhD¹

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Design Thinking, often called “user-centered design”, is a powerful way to build innovative health interventions and improve existing ones. Design Thinking is a human-centered, iterative approach that conceptualizes users as experts in their own experience and engages potential users from inception to development and testing to ensure that the end product (e.g., behavioral intervention, mobile app) will be acceptable, useable, and engaging. As such, Design Thinking methods - such as empathy building, ideating, and prototyping - can help improve effectiveness and extend the reach of evidence-based behavioral interventions by promoting the development of interventions that are based on what users want and need. While elements of Design Thinking have conceptual and methodological overlap with qualitative methods, quality improvement and other research approaches, Design Thinking methods provide a unique user-centered approach that is underused in the development of health interventions.

This panel of behavioral scientists and designers will help attendees consider how to incorporate Design Thinking methods into the development of digital and analog interventions. First, panelists will define Design Thinking and present results from a systematic review on the added value of applying Design Thinking methods in health interventions. We will then provide four examples of Design Thinking in action: 1) an academic-design partnership to create an evidence-based mHealth tool to increase uptake of technology for type 1 diabetes; 2) the process of identifying and interviewing end-users and experts beyond the academic sphere to refine and test a nutrition literacy e-tool; 3) the multi-method design and development of a technology-based type 2 diabetes self-management intervention; and 4) the use of Design Thinking to promote increased user engagement with a smartphone app for alcohol reduction. In the second half of the session, a moderated discussion will address challenges, recommendations and potential points of collaboration between designers and behavioral scientists to advance the development of interventions that are simultaneously user-centered and evidence-based. Attendees will also have the opportunity to ask questions and troubleshoot their own health-related Design Thinking challenges.

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Panel Discussion 17 12:45 PM-1:45 PM**NUTS AND BOLTS: A PRACTICAL Q&A ABOUT YOUR EDUCATION AND CAREER TRAJECTORY**

Dorothy McLeod, MA¹, Valerie H. Myers, PhD², Barbara Stetson, Ph.D.³, Patricia Sheean, PhD, RD⁴

¹Loyola University Chicago, Chicago, IL; ²Klein Buendel, Inc., Golden, CO; ³University of Louisville, Louisville, KY; ⁴Loyola University Chicago, Maywood, IL

Please join us for an informal panel and Q & A-based discussion of professional development tips for students and early-career researchers. Veteran SBM members who work in academia and industry will cover topics such as making the most of your undergraduate, graduate school, and postdoc years; planning for nontraditional vs. traditional career paths; publishing as an early career researcher; and more. This event aims to be an opportunity for newer members of SBM to ask about professional development topics they have always wondered about—come with any burning questions ready!

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Panel Discussion 18 12:45 PM-1:45 PM**NOVEL USES OF DECISION SUPPORT TOOLS FOR PATIENTS AND CLINICIANS: BLENDING HEALTH TECHNOLOGY AND HEALTH COMMUNICATION**

Aisha T. Langford, PhD, MPH¹, Tannaz Moin, M.D., M.B.A., M.S.H.S.², Margaret M. Byrne, PhD, MS³, Jamie L. Studts, PhD⁴

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Chair. The chair will give a brief overview about decision support tools and how they can be used to promote (1) informed decision making -- equipping patients with accurate, unbiased information needed to make health decisions, and (2) shared decision making -- patients and clinicians working together to make health decisions. The chair will also discuss the emerging role of health technology in supporting health decision making.

Presenter #1. In a practice level, cluster-randomized, intention-to-treat trial in one large academic health system, we tested the effectiveness of using trained pharmacists embedded in primary care to deliver a shared decision-making (SDM) intervention to engage patients in diabetes prevention, using a prediabetes decision aid. Presenter #1 will share the early trial findings which indicate that a prediabetes SDM intervention can be used to enhance patient engagement in evidence-based therapies to prevent diabetes and weight loss at 4 months and how discuss how this model may be disseminated to enhance type 2 diabetes prevention efforts among patients at highest risk.

Presenter #2 will review the development and testing of a web-based lung cancer screening decision aid. The overall goal of the decision aid is to improve individuals' decision making about being screened for lung cancer. The decision aid has been developed to be used by individuals in the community who are potentially interested in being screened for lung cancer, as well as by individuals who are exploring lung cancer screening with a health care provider and/or a lung cancer screening program. Besides increasing knowledge about lung cancer screening, the decision aid has several interactive components which go beyond just knowledge increases to try to improve decision making. These components include: 1) an algorithm which will inform individuals about their own risk of developing lung cancer risk; 2) an algorithm that will determine if the individual meets the USPSTF and NCCN guideline criteria for lung cancer screening; 3) question prompt lists to facilitate individuals discussions about lung cancer screening with the health care provider; 4) animated videos which help individuals understand informed decision making; and 5) a conjoint valuation exercise to elicit individuals' preference for lung cancer screening.

Presenter #3 will review the development and testing of a web-based tool to facilitate integration of evidence-based tools to support tobacco treatment efforts in a variety of clinical settings. The platform supports clinician-driven assessment and intervention but also provides several strategies to support patients. Presenter #3 will also discuss collaborations with a health IT company and a practice-based network to conduct iterative usability testing, pilot testing, and a large scale feasibility and acceptability trial to evaluate this intervention in dental care settings.

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Panel Discussion 19 12:45 PM-1:45 PM

LEVERAGING THE MEDIA TO IMPACT PUBLIC HEALTH

Katherine D. Hoerster, PhD, MPH¹, Jamie Bodenlos, Ph.D.², Cindy Kuzma, N/A³, Sherry Pagoto, PhD⁴

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To optimally impact public health, behavioral medicine researchers must effectively communicate behavioral science research priorities, findings, and implications to the public, clinicians, organizations, and decision-makers. The broad public reach of mass media offers a communication vehicle with a high return on investment. This panel will cover the rationale, challenges and solutions, recommended practices, and benefits to self, field, and society of leveraging the media to impact public health. Practical guidance regarding media outlet selection, writing style, institutional resources, and dissemination approaches will be provided. This panel will draw on panelists' varied and extensive relevant experiences, including prior media-related collaborations. One panelist has written approximately 20 op-eds and health advice articles in local and national media outlets; has provided comment across numerous media outlets regarding health-related research; and writes two health-focused blogs. She also leads a health-related, university-based media center, and advocates for policy and public health by writing letters to the editor to academic journals. Another panelist's relevant work includes op-ed writing, speaking at local marches, including the recent March for Science and Climate Change marches, and teaching op-ed writing to students and trainees. The panel's moderator recently drew on prior public health legislative advocacy and media interview experience by writing an op-ed, and used it as a platform to advocate for various healthcare, research, and policy changes. Two panelists published in SBM's Outlook newsletter on the importance of op-ed writing for advancing behavioral medicine, and tips for successful publishing. The fourth panelist is a widely published health and wellness freelance journalist, who has written for outlets such as Runner's World, SELF, Prevention, and Women's Health magazines. She previously worked in media relations for the Journal of the American Medical Association (JAMA). She has interviewed another panelist for prior media pieces and through her work with JAMA. The panel will be moderated and will utilize interactive, discussion-based learning with attendees. Attendees will have ample opportunities to ask questions of panelists and share ideas and experiences. Panelists will share a range of useful tips and perspectives so that attendees leave inspired and equipped to work with various media formats to enhance public health.

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Panel Discussion 20 12:45 PM-1:45 PM

BUILDING PHYSICIAN COMPETENCY IN LIFESTYLE MEDICINE: THE LIFESTYLE MEDICINE CORE COMPETENCIES PROGRAM

Danielle 'Dani' Pere, MPM¹, Liana Lianov, MD, MPH²

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Lifestyle medicine is a scientific approach to decreasing disease risk and illness burden by utilizing lifestyle interventions such as nutrition, physical activity, stress reduction, rest, smoking cessation, and avoidance of alcohol abuse. Lifestyle medicine is the recommended foundational approach to preventing and treating many chronic diseases. Lifestyle medicine is a core component of preventive medicine and its practices and programs are based on proven and effective methods of preventing and controlling disease. Lifestyle medicine is an innovative way to improve the well-being of individuals and communities.

The American College of Preventive Medicine (ACPM) and the American College of Lifestyle Medicine (ACLM) convened a blue ribbon panel of representatives from several major physician/health professional organizations to develop a consensus statement that was published in the Journal of the American Medical Association in 2010. The article was titled "Physician Competencies for Prescribing Lifestyle Medicine". The 15 competencies fall into five categories including: Leadership, Knowledge, Assessment Skills, Management Skills and Use of Office and Community Support.

In September 2016, ACPM and the ACLM released the Lifestyle Medicine Core Competencies program (LMCC), a culmination of over 4 years of work to create a first-of-its kind evidence-based online program. This 30-hour program is designed to provide a comprehensive foundation for doctors as well as nurses, nurse practitioners, physician assistants, dietitians, health coaches, and other allied health professionals with an interest in learning the basic foundational principles of lifestyle medicine. The curriculum teaches how to incorporate lifestyle medicine into practice and establishes a new standard for primary care focused on disease prevention, health promotion, and care coordination.

The nine modules comprising the 30-hour program cover basic and advanced information on: 1.) Core Competencies of Lifestyle Medicine, 2.) Nutrition, 3.) Physical Activity, 4.) Coaching Behavior Change, 5.) Sleep Health, 6.) Tobacco Cessation, 7.) Alcohol Use Risk Reduction, 8.) Emotional Wellness/Stress Reduction and 9.) Electives (choose 3 hours from 5 options). This curriculum comprehensively addresses the knowledge and skill gaps doctors themselves cited as major barriers to counseling patients about lifestyle interventions. The presentation will address why the curriculum is needed, who benefits from it, and how individual clinicians as well as the private sector health systems and residency programs in the U.S. are using it, and how it is utilized by the U.S. Federal Government.

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Panel Discussion 21

12:45 PM-1:45 PM

THE ACCUMULATING DATA TO OPTIMALLY PREDICT OBESITY TREATMENT (ADOPT) PROJECT

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Being overweight or obese significantly increases the risk of developing chronic diseases, including cancer, cardiovascular disease and diabetes. Weight loss trials in adults have documented considerable variation in the amount of weight lost and maintained over time in response to behavioral and pharmacological treatments. The identification of variables that predict treatment success can lead to insights into how psychosocial, behavioral, environmental, and biological factors operate and interact during weight loss and maintenance, ultimately enabling us to predict which weight management strategies work best for which individuals. However, the lack of standardized, multidisciplinary phenotyping across studies has hampered efforts to identify predictors of weight loss and regain that are replicable across studies. To facilitate the identification of a standard array of variables, the Accumulating Data to Optimally Predict obesity Treatment (ADOPT) Core Measures initiative, a trans-NIH effort led by the National Heart, Lung, and Blood Institute (NHLBI) and the National Cancer Institute (NCI) in collaboration with other NIH Institutes, Centers and Offices, is identifying a set of key variables and measures related to weight loss to determine potential predictors of successful weight loss and maintenance. Following an initial meeting in May of 2016, the ADOPT Core Measures Working Group – consisting of NIH and extramural scientists -- launched an effort to identify key variables and measures by entering potential moderators and mediators into the NCI's Grid-Enabled Measures (GEM) Database (<https://www.gem-measures.org/>). Constructs and measures related to weight loss and maintenance were identified for the following domains: behavioral, biological, environmental and psychosocial. The ultimate product of the Working Group is a core set of measures that are recommended for use in adult weight loss and maintenance trials. In this panel discussion, NIH and extramural scientists will describe the goals, process and products of ADOPT, including the ADOPT working model/framework and the core list of constructs and measures recommended by the ADOPT Working Group for inclusion in weight loss/maintenance trials. In addition, opportunities for investigators to engage in ADOPT, including potential funding opportunities to allow adding ADOPT measures to weight loss/maintenance trials, will be discussed. Following these presentations, panel members will engage in a discussion with audience members concerning the ultimate goals and utility of the ADOPT framework, constructs and measures in enabling more targeted, precise and effective treatments for obesity.

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Panel Discussion 22

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CAREERS IN CARDIOVASCULAR BEHAVIORAL MEDICINE

Carly M. Goldstein, Ph.D.¹, Rachel A. Millstein, Ph.D, MHS², Anne L. Saltzman, PsyD³, Joel W. Hughes, Ph.D⁴, Jeffrey J. Lauzon, M.A., Ph.D⁵

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The Society of Behavioral Medicine's Student Special Interest Group (Student SIG) and the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) are proud to jointly present a panel on careers in cardiovascular behavioral medicine. Cardiovascular disease (CVD) is the primary cause of death for adults in the United States, and many of the risk factors and treatments are behavioral, and therefore potentially modifiable. Consequently, CVD prevention and treatment represents an excellent career opportunity for behavioral medicine scientists and practitioners. AACVPR is a multidisciplinary professional organization aimed at improving quality of life in individuals with CVD or pulmonary diseases and their families. Members of AACVPR's Psychosocial and Nutrition Expert Group and colleagues will join in this panel discussion for individuals considering a career in this broad and exciting field. The panel will feature: a junior scientist with funding from the National Institutes of Health (NIH) to study cardiac rehabilitation (CR), technology, and weight loss who is also the course co-director of a National Heart, Lung, and Blood Institute-sponsored fellowship in cardiovascular behavioral medicine; a junior investigator with expertise in public health and clinical psychology with a K23 targeting physical inactivity through multilevel interventions for patients with CVD and diabetes; a clinician who created a psychology service within a major academic medical center's CR program; a senior scientist who has conducted ground-breaking NIH-funded research in CR and CVD patients who also established research programs in two CRs; and a mid-career health psychologist who works closely with cardiac rehab to detect, receive, and manage referrals for anxiety, depression, and recovery adjustment to medically traumatic events from pre-surgical/heart transplant evaluation through recovery. Attendees will leave with knowledge of how to establish a career in this field, seek grant-funding for CVD research, how to find CR programs to collaborate with, how to establish a program of research or clinical service within CR, current policy-level issues that affect this field, and what training to pursue to be successful.

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Panel Discussion 23

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CAN HEALTH EQUITY & SOCIAL JUSTICE IDEALS BE ACHIEVED IN TRANSLATIONAL RESEARCH? REACHING PEOPLE EXPERIENCING MARGINALIZATION

Lucie Levesque, PhD¹, Colin PT. Baillie, MSc¹, Erica Soltero, PhD², Scherezade Mama, DrPH³, Rebecca E. Lee, PhD⁴¹Queen's University, Kingston, ON, Canada; ²Arizona State University, Phoenix, AZ; ³The Pennsylvania State University, University Park, PA; ⁴Arizona State University, Phoenix, AZ

Community-engaged research (CEnR) often seeks to share all aspects of research with community members. Cast as a transformative research paradigm, CEnR intrinsically seeks to increase health equity and social justice by “empowering” community members to take an active role in decision-making and research tasks. Although laudable ideals, researchers typically work within institutions that perpetuate settler-colonial, or Euro-centric, values that are at least partially related to the dominance of positivist knowledge systems that dictate which “products” are valued as research outcomes, as well as which guidelines are used to determine what is considered ethical research. Translational scientists have a responsibility to challenge unequal power structures in relationship building, data collection, data analysis and dissemination of findings. Challenging these power structures involves actions by researchers within the academy and within the community. Researcher advocacy efforts may need to address university based research ethics’ policies, internal research funding structures, criteria for student admission and retention, criteria for faculty tenure and promotion, etc. Within the community, actions may involve researchers exploring how their positionality or personal characteristics, such as social status and ethnicity, influence their ability to work with marginalized populations. This panel will share examples of strategies that we have used to uphold the ideals of CEnR in ways that challenge the academic status quo, redress power imbalances among community and academic partners, and promote reciprocal knowledge translation consistent with health equity and social justice ideals. We will discuss the role that researcher identity plays in the development and implementation of community-engaged physical activity research involving Indigenous peoples in Canada, Hispanic populations in the United States, and Mexican populations in Mexico. We will highlight actions inside and outside of the academy that catalyze change and facilitate a researcher’s ability to connect with marginalized populations.

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Panel Discussion 24

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HUMAN SUBJECTS PROTECTIONS, NIH CLINICAL TRIALS POLICY, AND IMPLICATIONS FOR YOUR RESEARCH

William N. Elwood, Ph.D.¹, Catherine Stoney, PhD², Dana L. Wolff-Hughes, PhD¹, Dawn A. Morales, Ph.D., Experimental Psychology³¹National Institutes of Health, Bethesda, MD; ²NHLBI/NIH, Bethesda, MD; ³National Institutes of Health, BETHESDA, MD

Scientific disciplines can differ on what qualities constitute a *clinical trial*. NIH defines the term broadly, “A research study in which one or more human subjects are prospectively assigned to one or more interventions (which may include placebo or other control) to evaluate the effects of those interventions on health-related biomedical or behavioral outcomes.” NIH finalizes the implementation this definition with newly formatted FOAs, grant application segments, training certification requirements, and reporting requirements for funded projects as part of the agency’s ongoing efforts to enhance rigor and reproducibility.

For example, NIH defines *intervention* as a manipulation of a person or a person’s environment to modify **one or more** health-related biomedical or behavioral processes and/or endpoints. Principal and co-investigators who work on NIH-funded projects require Good Clinical Practice certification. Basic researchers in social-behavioral sciences may find that their projects now fall within the rubric of NIH clinical trials. NIH changes also pertain to submission and reporting requirements for applied/clinical researchers.

This session will include a brief overview of the current definitions and policies and spend more time orienting participants to the newly-implemented categories of NIH FOAs to help ensure that investigators submit applications that make their way through the peer review process and not be returned for applying through an incompatible FOA. Panelists also will address timing and content issues for grantee reports to clinicaltrials.gov, and orient participants to online resources they can access at home and their respective institutions.

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Panel Discussion 25

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ENGAGING MILITARY VETERANS THROUGH HEALTH, GENUINE RELATIONSHIPS, & PURPOSE: PERSPECTIVES FROM TEAM RED, WHITE & BLUE LEADERS

John Pinter, BS¹, Caroline Angel, Ph.D., R.N.², Sarah Holzhalb, MS, MPS³, David E. Goodrich, EdD, MA, MS⁴¹Team Red, White and Blue, Floyds Knobs, IN; ²Team Red, White & Blue, Westfield, NJ; ³Team Red White and Blue, Covington, LA; ⁴VA Ann Arbor HCS, Ann Arbor, MI

The transition from active military service to civilian life is a critical period for psychosocial challenges that can predispose veterans to increased health risks. Loss of leadership, camaraderie, sense of purpose, military identity and a physically active lifestyle can compromise resiliency developed through active duty service. Team Red, White & Blue (RWB) is a 120,000+ member intergenerational veteran service organization (VSO) founded in 2010 to enrich veterans’ lives by connecting them to their communities through physical and social activities. Team RWB’s 220 local chapters in the US aim to enrich members’ lives by providing opportunities for physical, social, service, and leadership activities. A conceptual model called the “Engagement Funnel” is the basis for programming. The Funnel was designed to engage veterans through positive experiences that foster close, genuine, personal relationships within a broader social network to facilitate reintegration with local communities. This network creates a safe environment for veterans to share adjustment challenges and to mobilize the social support of teammates to link at-risk members to community resources, acute care services, and to prevent psychosocial decline.

This panel discussion is a partnership between the SBM Scientific and Professional Liaison Council and Team RWB to introduce the audience to a non-for-profit that has successfully used evidence-based behavioral strategies in local communities to improve veterans’ lives. The Chair will summarize the challenges faced by veterans reintegrating into civilian life and the opportunities for behavioral medicine to address these needs. The first panelist will discuss the founding of Team RWB, how the Engagement Model and programming developed over time, and highlight current national initiatives. The second panelist will present how Team RWB has successfully translated theory into programming to improve veteran outcomes as well as current efforts to measure and evaluate the organization’s programming including, the psychometric validation of an Enriched Life Scale. The third panelist will describe local Team RWB activities and cultural context of the New Orleans Chapter. Ample time will be provided for an interactive discussion with the audience with a focus on identifying future opportunities in which both organizations can collaborate to support the other’s mission to reach at-risk populations through psychosocial community interventions

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Panel Discussion 26**12:45 PM-1:45 PM****EXTENDING OUR REACH: USING PATHWAYS TO ADDRESS PERSISTENT PAIN**Patricia Robinson, PhD¹, Kathryn Kanzler, PsyD, ABPP², Christopher L. Hunter, Ph.D.³, Jeff Reiter, PhD, ABPP⁴¹Mountainview Consulting Group, Inc., Portland, OR; ²University of Texas Health Science Center San Antonio, San Antonio, TX; ³Defense Health Agency, Arlington, VA; ⁴Swedish Medical Group, Seattle, WA

While there are a number of empirically supported interventions for persistent pain, most people challenged to cope with chronic pain do not receive them. In the health care world of today, little thought is given to prevention of chronic pain and early interventions, and most resources are delegated to caring for patients with the greatest complexity. Barriers to dissemination of behavioral interventions for coping with pain and seeking a higher quality of life include lack of knowledge and training among clinicians, over-reliance on medication treatments, a mismatch between where patients seek care and where behavioral clinicians work, and prohibitive costs for specialized treatment programs. Increasingly, behavioral health clinicians are re-locating their practice to primary care clinics where they work as fully integrated team members. In this panel discussion, four primary care behavioral health clinicians (PC BHCs) describe their experience with development, implementation, and evaluation of pathway strategies for addressing acute and chronic pain complaints among primary care patients. Pathway strategies rely on a population-based care, as opposed to case-based care, approach where the attempt is to provide “a small intervention for a lot of people” to improve outcomes for all. The panelists will include PC BHCs working in the Department of Defense, rural health care, urban commercial systems, and academic health care training clinics. Each panelist will respond to prompts concerning pathway work, such as defining the population, selecting interventions, and engaging team members and patients. Participants will be encouraged to share experiences and pose questions to the panelists. The session will conclude with each panelist describe “lessons learned” and “three wishes” for change in training and research approaches to improve the reach of interventions for patients with persistent pain.

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Panel Discussion 27**12:45 PM-1:45 PM****PUBLIC/PRIVATE PARTNERSHIPS FOR PUBLIC HEALTH: LESSONS FROM THE SANTA MONICA WELLBEING PROJECT AND AIR LOUISVILLE**Ernesto R. Ramirez, PhD, MS¹, Douglas Yeung, N/A², Meredith Barrett, PhD³, Lisa E. Parson, MPA⁴, Grace Simrall, N/A⁵¹Fitabase, San Diego, CA; ²RAND Corporation, Santa Monica, CA; ³Propeller Health, San Francisco, CA; ⁴City of Santa Monica, Los Angeles, CA; ⁵Louisville Metro Government, Louisville, KY

The rise of personal and patient-generated health data has fundamentally changed the way researchers think about understanding numerous health behaviors. With the advent of technology for tracking, sharing, and analyzing health behaviors, there has been an emphasis on understanding behavioral patterns, outcomes, and new intervention methodologies. However, another use case for this type of data has also emerged: the ability for citizens to share this data with their local communities and government organizations in order to impact public health.

Representatives from RAND (Douglas Yeung) and the City of Santa Monica (Lisa Parsons) will discuss their in-progress physical activity and wellbeing study being conducted with 200 current Santa Monica residents. These residents have been provided with Fitbit devices to remotely track their physical activity and sleep behaviors. The data is shared with RAND and the City of Santa Monica through a partnership with Fitabase. The panelists will discuss the project, offering insight on lessons learned and preliminary data.

Meredith Barrett, VP of Research at Propeller Health, and Grace Simrall, Chief of Civic Innovation and Technology, will discuss the successful AIR Louisville project, which leveraged Propeller Health's remote asthma inhaler sensor technology to track where and when rescue medication use occurred among 1000 residents in Louisville, KY. These data generated novel insights to inform Louisville Metro's municipal interventions. Insights from the project, including improved asthma outcomes, enhanced civic engagement, and implications for urban planning policy at the local and national level, will be shared.

Audience members will learn about ongoing and new models for public/private partnerships to leverage citizen health data in order to make a positive impact in local communities.

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Panel Discussion 28**12:45 PM-1:45 PM****MIND-BODY APPROACHES TO BEHAVIORAL CHANGE - DO THEY WORK AND HOW?**Elena Salmoirago-Blotcher, MD, PhD¹, Beth Bock, PhD², Crystal Park, CT³¹The Miriam Hospital, Alpert Medical School of Brown University, Providence, RI; ²Brown Medical School, Webster, MA; ³University of Connecticut, Storrs Mansfield, CT

Physical inactivity, smoking, and poor dietary habits are major contributors to a range of medical conditions including obesity, the metabolic syndrome, type II diabetes, cancer, and cardiovascular disease (CVD). Promoting and maintaining change in these behaviors is a challenging and yet unresolved public health problem. Clearly, we need creative approaches to promote lasting changes in these important behavioral risk factors.

Self-regulation is central to the processes of behavioral change and maintenance of healthy behaviors and interventions supporting the development of this capacity represent an opportunity to promote behavioral change and improve clinical outcomes. Mind-body approaches have been shown to enhance self-regulation, but whether they may promote change in health behaviors is still unknown.

Using evidence from the literature and novel research findings this panel discussion will focus on this novel and controversial topic, namely, whether mind-body approaches can promote behavioral change. We will examine this topic from experimental and theoretical perspectives with a particular focus on smoking cessation and on the promotion of physical activity.

Dr. Bock will begin by examining the role of yoga in smoking cessation. Traditional aerobic exercise has been shown to enhance quit rates among women. Yoga represents a mind-body practice that includes physical activity, meditation and mindfulness – practices that may further enhance the ability of men and women to quit smoking.

Dr. Salmoirago-Blotcher will use findings from a study of tai chi for physically inactive individuals with CVD and data from a school-based mindfulness intervention for teenagers to discuss the possible effect of tai chi and mindfulness training, respectively, in the promotion of physical activity in these populations.

Dr. Park will address hypothesized mechanisms, existing research gaps, and challenges to the clinical application of mind-body approaches to behavioral change. For example, yoga may improve individuals' comfort with their bodies and movement, serving as a “gateway” to other forms of exercise.

We will conclude with a discussion and Q&A session to obtain panelists' and audience's feedback and input on this novel approach to behavioral change.

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Symposium 47**2:00 PM-3:15 PM****(MIS)PREDICTING AFFECTIVE REACTIONS IN THE FUTURE SELF AND AMONG OTHERS: CONSEQUENCES FOR PALLIATIVE CARE DECISION MAKING**Rebecca Anne. Ferrer, PhD¹, Michael Hoerger, PhD, MSCR², Caitlin Drummond, PhD³, Jennifer M. Taber, PhD⁴¹National Cancer Institute, Rockville, MD; ²Tulane University, New Orleans, LA; ³Erb Institute, University of Michigan, Pittsburgh, PA; ⁴Kent State University, Kent, OH

Incorporating care aimed at comfort rather than cure (i.e., palliative care [PC]) into primary care for cancer and other advanced illness with high symptom burden is an important component of patient-centered care. However, PC is underutilized; many patients do not receive PC until end-of-life, when it may be too late to substantially alter quality of life. For patients to receive timely PC, the provider must decide to recommend PC – or provide PC or a PC referral at a patient request – and the patient must decide to accept (or request) PC services. Thus, understanding psychological and decisional processes among patients and providers is critical to developing evidence-based interventions to improve PC uptake. In particular, psychological and decisional theory suggests that inaccurate affective predictions – forecasts an individual makes about how he or she will feel in the future, or about how another person feels in the present – may be an important barrier to PC referral and uptake. This symposium examines how biases in affective predictions contribute to communication and coordination of PC among patients and providers. Three speakers will show that 1) medical providers may be biased in predicting patient PC preferences and affective responses to PC; 2) patients make errors in predicting how they will feel in response to their future illness trajectory; and 3) patients' and providers' decision making can be influenced by biased affective forecasts. A discussant will then synthesize presentations and discuss the value of incorporating social psychological and decisional theory into PC research and interventions.

Symposium 47A

INTRAPERSONAL AND INTERPERSONAL AFFECTIVE (MIS)PREDICTIONS IN PALLIATIVE CARE DECISION MAKING

Dr. Rebecca Anne Ferrer, PhD

Research suggests that individuals have difficulty predicting how they, themselves, will feel in the future, as well as in predicting how others feel (either at present or in the future). Predictions are most likely to be inaccurate when the individual predicting how they will, or how others do, feel in an emotional (i.e., hot) state when the predictor is in an unemotional (i.e., cold) state – termed the hot-cold empathy gap. We translated decision science theory on affective forecasting and the hot-cold empathy gap to understand patient and provider barriers to palliative care. We uncovered *interpersonal* empathy gaps in a nationally representative U.S. sample of medical providers (Study 1, $n=502$). Empathy gap between providers' own preference for PC and their perceptions of patients' preference was associated with feeling threatened when they cannot cure disease and with less willingness to provide/refer to PC. We also uncovered *intrapersonal* empathy gaps (Study 2) among PC-naive ($n=166$) patients and nonpatients ($n=289$) compared to ratings among PC-experienced ($n=33$) in their predictions of how discussing PC would make them feel. Empathy gap was associated with PC information avoidance, less positive beliefs about PC, and less endorsement of PC as standard-of-care. These findings suggest that affective mispredictions about others preferences, and affective mispredictions about one's own feelings and preferences in the future, may be important barriers to PC referral and uptake.

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Symposium 47B

AFFECTIVE FORECASTING AND PALLIATIVE CARE AVOIDANCE IN ADVANCED CANCER

Dr. Michael Hoerger, PhD, MSCR

Background: Palliative care benefits quality of life and is recommended for all patients with advanced cancer. Affective forecasting theory could explain aversion to palliative care.

Method: We ran 5 studies ($N=1,583$) involving cancer patients, non-patients, family caregivers, and oncologists. Following social psychology methods, participants made affective forecasts about living with advanced cancer. These were compared to patients' actual experiences. Patients also made forecasts about palliative care visits, and rated their desire for help with affective forecasting.

Results: Non-patients, family caregivers, and oncologists underestimated patients' quality of life in advanced cancer (Studies 1 & 2). Patients overestimated future quality of life (Study 2). Patients overestimated the emotional distress of palliative care visits (Studies 3 & 4). Most patients wanted help with affective forecasting (Study 5).

Discussion: Patients' challenges in affective forecasting may foster avoidance of palliative care. Non-patients may lack awareness of these biases. Actionable research on fundamental mechanisms underlying affective forecasting and health-care decision making is warranted.

Symposium 47C

BEHAVIORAL INFLUENCES ON CLINICIAN DECISION MAKING IN END-OF-LIFE SITUATIONS

Caitlin Drummond, PhD

Behavioral approaches have increasingly appeared in the health decision making literature in recent years, yet have infrequently focused on clinician decision making. In exploratory research with 8 oncologists, 1 intensive care doctor, and 4 cardiologists, we applied the mental models methodology of in-depth interviewing and analysis to understand how clinicians judge and communicate end-of-life prognosis to patients, and how they decide if and when to consult palliative care specialists. A thematic frequency analysis and corresponding mental model diagram leverage social psychological theories (e.g., terror management theory, intergroup dynamics, self and identity) to elucidate previously unidentified behavioral factors influencing clinician judgment and decision making. We find that mortality salience, affective and relational biases, and intergroup or identity dynamics within the clinical setting can contribute to delayed prognostic conversations and palliative care referrals. While differences appear to exist between specialties, data also suggest a strong role for individual differences within specialty. We conclude with a discussion of potential affective interventions for further testing in experimental or survey settings.

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Symposium 48

2:00 PM-3:15 PM

SITTING LESS AND MOVING MORE: EMERGING METHODS AND STRATEGIES FOR REDUCING SEDENTARY BEHAVIOR

Matthew P. Buman, PhD, FACS¹, Meynard John L. Toledo, MS¹, Sarah L. Mullane, PhD¹, Michelle L Takemoto, PhD², Dori E. Rosenberg, PhD, MPH³

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Sedentary behavior has emerged in recent years as an independent risk factor for cardiovascular disease, diabetes, and premature death, yet evidence-based strategies for reducing sedentary time are scarce. The science of sedentary behavior change is complex given the ubiquitous, habitual, and socially-reinforced nature of the behavior. While macro-level interventions exist that target sedentary time in youth, older adults, and office workers, careful formative work that identify intervention strategies to uniquely address the complex nature of sedentary behavior are not common. In this symposium we present a set of formative studies using cutting-edge methods and technologies to identify feasible and efficacious strategies for reducing sedentary time in work and home environments. Mr. Meynard Toledo will present intensive ecological momentary assessments of contextual factors to inform optimal moments for intervention delivery in office workers. Dr. Sarah Mullane will follow with a presentation of a micro-randomized trial testing the efficacy of content-specific email-based prompts in sedentary office workers with sit-stand workstations. Dr. Michelle Takemoto will present feasibility and acceptability results from a recent randomized controlled trial testing the impact of prompts, sit-stand workstations, and counters on two distinct sitting interruption modalities (i.e., sit less, increase sit-to-stand transitions). Finally, Dr. Dori Rosenberg will highlight promising strategies, emerging technologies, and future directions required to significantly advance the field of sedentary behavior interventions.

Symposium 48A

MOMENTARY AFFECTIVE PREDICTORS OF SEDENTARY AND ACTIVE BEHAVIORS IN THE WORKPLACE

Meynard John L. Toledo, MS

Background: Understanding the “in the moment” affective states that precede and follow sedentary behaviors (SB) could inform development of interventions to reduce SB.

Purpose: To examine the bi-directional relationship between momentary affective states and objectively-measured workplace SB.

Methods: Sedentary office workers with sit-stand workstations were recruited to participate in a 20-workday observational study. Participants completed ecological momentary assessments (EMA; total of 60 per participant: 3 per day x 5 workdays/week x 4 weeks) of stress, productivity, calmness/energy, sadness, intention to stand/move in the next hour. Participants also wore an activPAL sensor. Each EMA response was time-matched with the activPAL outcomes (i.e., total time spent in sedentary, standing, and moving behaviors and total sit-stand transitions one hour preceding and proceeding each EMA response). Multilevel models were used to examine the bi-directional associations of sitting, standing, and moving behaviors and affective states. All models were adjusted for age, gender, race and job type.

Results: A total of 18 participants (age = 48.9 ± 9.9 years; 44% male; 83% white) completed the study. Four hundred ninety-three EMA responses ($M=27.4 \pm 13.3$ EMA responses/participant) were analyzed. Overall (i.e., between-person associations), individuals reporting higher stress, calmness and energy engaged in less sitting ($b[SE]= -20.1[6.1], -15.7[5.4], -17.7[5.5]$, respectively, $p<.01$) and more standing ($b[SE]= 20.8[5.5], 12.0[4.9], 20.4[5.0]$, respectively, $p<.01$) in the next hour. Individuals reporting higher sadness, productivity and intent to stand/move engaged in more sitting ($b[SE]= 14.3[4.9], 21.5[5.4], 23.0[5.2]$, respectively, $p<.01$) and less standing ($b[SE]= -11.7[4.4], 19.0[4.9], -18.8[4.8]$, respectively, $p<.01$) in the next hour. When examining momentary relationships (i.e., within-person associations), individuals sat less ($b[SE]= -3.9[1.8]$, $p=.02$) and stood more ($b[SE]= 3.5[1.6]$, $p=.02$) in the hour following higher than usual energy and sat less ($b[SE]= -2.8[1.4]$, $p=.04$) and moved more ($b[SE]= 1.2[0.4]$, $p<.01$) following higher than usual intentions to stand/move.

Conclusion: Affective states significantly influence workplace sedentary and active behaviors in complex ways. Information regarding context (i.e., location in the office, nature of job tasks) may complement these findings in developing just-in-time interventions.

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Symposium 48B

EMAIL-BASED PROMPTS TO REDUCE SEDENTARY TIME IN OFFICE WORKERS WITH SIT-STAND WORKSTATIONS: A MICRO-RANDOMIZED TRIAL

Sarah L. Mullane, PhD

PURPOSE: To test the proximal effects of email-based prompts on workplace sedentary behavior.

METHODS: A 20-workday micro-randomized trial was conducted in office workers using sit-stand workstations. Prompt delivery was sequentially randomized to be sent (ST) or not sent (NST) to all participants (probability of 0.5), at eight decision points per day (between 9am and 5pm), resulting in a total of 2400 randomizations across participants. Among prompts per person, half encouraged standing more (*stand*; N=80) and the other half encouraged moving more (*move*; N=80). Participants wore an activPAL3c sensor and completed a retrospective usability survey. General estimating equations were used to examine the effect of prompt delivery by modeling the mean likelihood of a response (i.e., transition from sitting to standing or sitting to moving) as an odds ratio, over the next 5-min and 30-min periods. Mixed model analyses were used to examine the association between prompt type and total sedentary time over the next 30-min period. All models were adjusted for age, race, gender, day of intervention and minutes of sitting 30-mins prior to a prompt. Decision points where the participant was standing or moving at the time of delivery (ST) or scheduled (NST) time were excluded from analyses.

RESULTS: Among participants (N = 15; 67% female; age = 50.9 ± 9.5 yrs), 1147 decision points occurred when seated (ST = 543; NST = 604). Participants were 42% more likely to transition from sitting to standing or sitting to moving within 5-mins when a prompt was sent (OR[95%CI] = 1.4[1.1, 1.8], $p<.01$). Stand prompts were 25% more likely to elicit a transition (OR[95%CI] = 1.6[1.2, 2.0], $p<.01$) than move prompts (OR[95%CI] = 1.3[1.0, 1.7], $p<.05$). Sending a prompt was associated with less sitting ($b[95%CI] = -2.0[-2.9, -1.0]$) and more standing ($b[95%CI] = 1.8[1.0, 2.5]$) over the next 30-mins ($p's<.01$). Participants who stood within the first 5-mins of receiving a prompt exhibited significantly less sitting ($b[95%CI] = -8.3[-9.8, -6.9]$) and more standing ($b[95%CI] = 6.5[5.3, 7.8]$) over the next 30-mins ($p<.01$). Mean usability ratings were higher for *stand* ($68 \pm 1.9\%$) compared to *move* messages ($60 \pm 2.6\%$).

CONCLUSIONS: Prompts may be an effective complementary strategy to encourage sit-stand workstation use. Specificity of the behavioral target (*stand* rather than *move*) may be necessary to maximize prompt effectiveness and should be considered in future prompt based sedentary behavior reduction interventions.

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Symposium 48C

THE SEARCH FOR THE EJECTING CHAIR: A MIXED METHODS ANALYSIS OF TOOL USE IN A SEDENTARY BEHAVIOR INTERVENTION

Dr. Michelle L Takemoto, PhD

Background: There are negative associations of excessive sitting and health. Research is needed on interventions targeting sedentary behavior (SB) with appropriate behavior change tools. The current study used convergent sequential mixed methods (QUAN+qual) to explore how tool use during a pilot intervention impacted SB to inform future long-term interventions.

Methods: Data came from a two arm randomized-controlled pilot trial designed to test the feasibility and acceptability of a SB intervention. Participants were between 50 and 70 years of age (N=30) with an equal number of workers and non-workers. During the intervention, participants were presented with a number of intervention tools (e.g., prompts, standing desks, counters) and asked to report which tools they used as well as the frequency of use. Separate mixed effects regression models explored associations between change in number of tools and frequency of tool use with the two intervention targets: change in sitting time and number of sit-to-stand transitions overtime. Qualitative data explored participants' attitudes towards intervention tools and explained the quantitative results.

Results: There was a significant relationship between mean tool use and sitting time. With a one-unit increase in frequency of tool use, participants reduced daily sitting time by 75 minutes. Sit-to-stand transitions were not associated with frequency of tool use. There were no significant relationships between total tool use and sitting time or sit-to-stand transitions. Twenty-four semi-structured interviews were coded and a thematic analysis revealed 4 themes related to tool use: 1) prompts to disrupt behavior; 2) tools matching the goal; 3) tools for sit-to-stand were ineffective; and 4) tool use evolved over time.

Conclusions: Participants who honed in on effective tools were more successful in reducing sitting time. Tools for participants to change sit-to-stand transitions were not effective. Devices with real-time feedback that accurately track SB are needed.

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Symposium 49

2:00 PM-3:15 PM

AN UPDATE ON THE COST-EFFECTIVENESS WORKING GROUP ON METHODOLOGY, COLLABORATIVE CARE AND DISSEMINATION

Dawn K. Wilson, Ph.D., FSBM¹, Robert M. Kaplan, Ph.D., FSBM², Paul Jacobsen, PhD³, William Riley, PhD⁴

¹University of South Carolina, Columbia, SC; ²Clinical Excellence Research Center, Stanford, CA; ³National Cancer Institute, Bethesda, MD; ⁴NIH Office of Behavioral and Social Sciences Research, Bethesda, MD

This symposium will provide an update and overview of a special working group on the applications of cost-effectiveness analysis for behavioral and psychological interventions. Although standardized methods for cost-effectiveness have been developed and have been widely applied in medicine, we have seen few applications in Health Psychology and Behavioral Medicine. The purpose of this symposium is to provide information from the working group based on their reviewed of the current recommendations for cost-effectiveness analysis and appraisal of whether they are appropriate for studies in the field of Health Psychology and Behavioral Medicine. The group will develop four white papers that will be covered in this session on standards of cost-effectiveness in the areas of methodology, prevention, collaborative care and dissemination. After each presentation the group will answer questions as a panel. The working group and symposium leaders represent the Society for Health Psychology, the National Cancer Institute, and the Office for Behavioral and Social Sciences Research at the National Institutes of Health.

Symposium 49A

STANDARDS FOR COST-EFFECTIVENESS ANALYSES FOR THE FIELD OF HEALTH PSYCHOLOGY AND BEHAVIORAL MEDICINE

Dr. Robert M. Kaplan, Ph.D., FSBM

This year, the United States will spend over \$3.2 trillion on health services, making US healthcare the largest sector in the biggest economy in the history of the world. Despite these large expenditures, health outcomes in the United States are not exceptional. In contrast to other rich economies, life expectancies in the United States have been systematically losing ground over the last 35 years. Finding ways to spend resources more efficiently is an important national objective. However, achieving scientifically based resource allocation remains difficult. Different sectors of the healthcare system compete for the same resources. Yet the competing sectors measure their productivity in different outcome units. This paper reviews progress toward the development of a generic tool kit that can be used to evaluate the cost/effectiveness of a wide range of healthcare services. A variety of well-validated outcome measures are available. Most of the measures integrate measures of morbidity and mortality into a common unit. The common outcome unit is necessary to make comparisons between services as different as orthopedic surgery and depression management. The assessment tools typically measure outcome using standardized questionnaires that capture patient reported functioning and symptoms. Preference weights are used to place levels of wellness on a continuum ranging from 0 (for dead or about the same as being dead) to 1.0 for complete wellness. Each year of life is weighted by level of wellness. Summing values across years yields a measure of Quality-adjusted life expectancy. Although these measures have become common in medical clinical research, there have been very few applications in behavioral medicine. As a result, behavioral programs may be neglected in discussions of resource allocation. The presentation will summarize existing measurement methods and will offer examples of how behavioral interventions can be compared with other health services in terms of cost-effectiveness.

Symposium 49B

STATUS OF FINANCIAL AND ECONOMIC ANALYSES OF COLLABORATIVE CARE

Dr. Paul Jacobsen, PhD

A robust evidence base exists for the efficacy of variety of mental health and psychosocial interventions in improving quality of life outcomes for people receiving medical care. A notable example is collaborative care management of depression, a multi-component intervention to treat depression that typically uses case managers to link patients and medical care practitioners with mental health professionals. Numerous randomized trials have demonstrated that collaborative care is more effective than standard care in improving depression outcomes for patients seen in primary care settings as well specialty settings such as outpatient oncology clinics. Despite considerable evidence for their efficacy, implementation of collaborative care and other forms of psychosocial care in medical care settings has been limited. Among the oft-cited concerns are unanswered questions about the financial and economic impact of providing mental health and psychosocial services in a routine manner in medical settings. This presentation will review the state-of-the science regarding research on financial and economic aspects of introducing collaborative care and similar interventions in medical settings. Examples will be provided of studies that have enumerated the costs of these interventions as well as studies that have evaluated costs in relation to indices of effectiveness. The presentation will conclude with identifying directions for future research in this area as well as a consideration of how studies incorporating financial and economic outcomes can help foster broader adoption of mental health and psychosocial interventions in medical care settings.

Symposium 49C

STANDARDS FOR COST-EFFECTIVENESS ANALYSES IN THE CONTEXT OF DISSEMINATION

Dr. William Riley, PhD

Despite considerable research support for various social and behavioral interventions to improve health, both at the individual and population level, the dissemination and implementation of these interventions in real world settings has lagged. Implementation science studies the methods by which the systematic adoption of evidence-based practices into routine practice can be promoted. There have been a number of important and emerging advances in implementation science including novel research methods better suited to practice settings, increased integration of research methods within practice settings (e.g., learning health systems), technological delivery of interventions, and planned adaptations of interventions to address the unique needs of a variety of practice settings and resources. Implementation research on how economic or cost-benefit considerations influence adoption, however, are limited. In large part, the relative lack of economic and cost-benefit consideration in the implementation of social and behavioral interventions is the result of a scarcity of cost-effectiveness research for these interventions. This presentation will discuss the various health economics approaches, including cost-benefit analysis, cost-effectiveness analysis including cost utility and incremental cost-effectiveness ratio (ICER) and distributed cost-effectiveness analysis, and how these approaches can be applied to and adapted for social and behavioral interventions. The outcomes commonly considered in these cost-effectiveness analyses (illnesses prevented, life years added, quality-adjusted life years) are often quite distal from the outcomes of most behavioral intervention studies; therefore, methods for estimating and modeling these cost-effectiveness values from the outcomes of these studies will be considered. Further, because technology-based interventions often incur more fixed than variable costs, estimates of reach or scalability also need to be considered. The impact of these various cost-effectiveness approaches on facilitating implementation of social and behavioral interventions will be discussed.

Symposium 50

2:00 PM-3:15 PM

DELIVERING HEALTH PROMOTION INTERVENTIONS ON SOCIAL MEDIA: ENGAGEMENT AND METHODOLOGICAL CONSIDERATIONS

Sherry Pagoto, PhD¹, Molly E. Waring, PhD¹, Danielle E. Jake-Schoffman, PhD², Wen-ying Sylvia Chou, PhD, MPH³

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The majority of US adults have at least one social media account and most users log in on a daily basis to interact with family and friends, read news/online articles, and/or participate in topic-focused communities. Given the near ubiquity of use, social media platforms can engage large audiences on nearly any topic. Not surprisingly, evidence is now mounting for social media as a delivery modality for health promotion interventions. The use of commercial social media platforms to deliver health promotion programming sidesteps technology costs of developing a unique website or platform and eliminates barriers to participation in clinic or community programs (e.g., geographical barriers, transportation, scheduling, childcare). Along with the benefits come significant challenges which we address in this symposium. First, very little research has explored how to develop intervention content that engages participants in discussions in a social media setting. Dr. Molly Waring will present her work exploring the characteristics of intervention posts that engaged the most and least participants in a Facebook post-partum weight loss intervention. A second challenge is that we know little about the types of participant engagement associated with behavior change in these programs. Dr. Danielle Jake-Schoffman will present her work exploring how participants discuss their behavioral goals in a Facebook weight loss intervention and the relationship between aspects of the language they use to articulate goals and end-of-treatment weight loss outcomes. A third challenge relates to attracting and engaging individuals who are not motivated to change or seeking help to change. Social media platforms can expand our reach to people who are not actively seeking help to change but how to leverage it to engage such populations is not well studied. Dr. Sherry Pagoto will present methodological challenges relating to recruitment, intervention content development, and intervention delivery for a Facebook intervention targeting mothers of teen daughters who engage in indoor tanning. Findings of all three studies will be informative to researchers designing social media-delivered health promotion interventions. Dr. Sylvia Chou, a social media expert at the National Cancer Institute will put these findings into perspective of the broader field of NIH-funded research on social media and health and make recommendations for important directions for future research.

Symposium 50A

METHODOLOGICAL CHALLENGES OF SOCIAL MEDIA-DELIVERED HEALTH PROMOTION INTERVENTIONS

Dr. Sherry Pagoto, PhD

Social media platforms can be used to deliver health promotion interventions to wide audiences without the barriers to participation that plague traditionally-delivered programs (e.g., geography, transportation, scheduling, childcare). Because most people access their social media feeds daily, health programming can be delivered to populations who are not necessarily seeking help or motivated to change. Despite these promising features, designing studies to evaluate social media-delivered interventions involves unique methodological issues that can impact. We present data regarding these issues from a pilot feasibility trial (N=90) and a randomized controlled trial (N=97) evaluating a Facebook-delivered intervention to mothers of teen daughters to reduce indoor tanning. The pilot study was conducted to refine recruitment and intervention procedures. The first 97 participants have been enrolled in the randomized trial and were included in the present analyses. Mothers who enrolled were similar in health risk factors relative to state averages (41% vs 35% obesity rate; 15% vs 20% smokers; 51% vs 48% HPV vaccination rates) which suggests that social media delivered interventions may have the potential to attract representative populations. In terms of enrollment strategies, one major methodological issue is how to enroll participants into an online community. Online social communities are constantly growing in size which in a research setting would produce variability across participants. Our pilot data revealed that our original plan to recruiting groups with a static fixed number of membership (to avoid variability caused by differential group size) resulted in longer wait times between recruitment and intervention start (mean wait time = 6 months vs 1 week) and greater participant loss (16.7% versus 5.2%) relative to the rolling recruitment approach we used in the trial. Another methodological issue was designing an intervention about a health topic for which awareness and interest in the population is low. We embedded indoor tanning content within a feed addressing a variety of health topics of interest to mothers of teen girls as expressed in formative focus groups. This approach resulted in similar engagement in with indoor tanning-related posts relative to posts on other health topics (mean = 1.13, sd = 1.87 engagements vs 1.54, sd = 2.33 engagements), however engagement was low for both. Lessons learned and recommendations for future research will be discussed.

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Symposium 50B

TYPES OF INTERVENTION POSTS THAT ENGAGE THE LEAST AND MOST PARTICIPANTS IN A FACEBOOK POST-PARTUM WEIGHT LOSS INTERVENTION

Dr. Molly E. Waring, PhD

Knowledge is nascent about how to optimally engage participants in social media-delivered weight loss interventions. Using data from a pilot study of a post-partum weight loss intervention delivered on Facebook, we examined which types of intervention posts engaged the least and most participants to identify which posts could benefit from modification, and what ways to present intervention content that might be more effective at engaging participants. Over 12 weeks, 19 overweight/obese women received counseling based on the Diabetes Prevention Program via posts, links to articles and recipes, a weekly “weigh-in”, and support from coaches and other women. Women were instructed to use a free commercial app to track their diet and exercise. Retention was 95% at 12 weeks. We downloaded engagement data from Facebook and calculated the percent of participants who replied to each of 151 intervention posts. We categorized intervention posts as no-engagement (no participants replying), higher-engagement ($\geq 25\%$ of participants replying [$n \geq 5$]), or some-engagement ($< 25\%$ replying [$n = 1-4$]). As variables were not normally distributed, we used Wilcoxon rank-sum tests to compare the percent of participants replying by post type. We also described the proportion of low- and higher-engagement posts by post type. A median of 0% of participants (IQR: 0–16%; 0–79%) replied to intervention posts. The proportion of participants replying differed by post type ($p < 0.0001$). Half of intervention posts (51%; $n = 77/151$) were no-engagement and 17% ($n = 26/151$) were higher-engagement posts. Four types of intervention posts were represented among high-engagement posts: weigh-ins ($n = 12$; 83% higher-engagement, 0% no-engagement), posts soliciting challenges ($n = 9$; 44% higher-engagement, 33% no-engagement), posts asking participants to set a goal ($n = 28$; 25% higher-engagement, 29% no-engagement), and posts soliciting thoughts on a topic ($n = 22$; 23% higher-engagement, 45% no-engagement). Conversely, 4 post types included no higher-engagement posts: explaining program logistics ($n = 7$; 100% no-engagement), offering a motivational message ($n = 10$; 90% no-engagement), providing information ($n = 57$; 68% no-engagement), or soliciting a progress report ($n = 6$; 17% no-engagement). Objective engagement data can provide insights into what types of intervention posts are most effective at engaging participants in social media delivered behavioral interventions.

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Symposium 50C

GETTING PARTICIPANTS TO SET BEHAVIORAL GOALS IN AN ONLINE WEIGHT LOSS PROGRAM: WHAT KINDS OF GOALS MATTER?

Danielle E. Jake-Schoffman, PhD

Greater participant engagement is associated with weight loss in social media-delivered interventions, but little is known about what types of engagement impact weight loss. Goal setting is an important behavioral strategy emphasized in all weight loss programs. Using data from a Facebook-delivered intervention, we examined the characteristics of participants' posts in which they set a goal to explore the relationship between the characteristics of goals and weight loss. Overweight/obese adults ($n = 53$) received a 12-week Facebook-delivered weight loss intervention based on the Diabetes Prevention Program. We downloaded objective engagement data from Facebook and content analyzed participant posts in which participants set a goal (i.e., expressed an intention to make a healthy lifestyle change). Two coders independently coded whether the goals were quantifiable (e.g., I will track my diet 7 days this week) vs. not (e.g., I'm going to get back on track this week) (84% agreement, $\kappa = 0.58$ [95% CI: 0.38–0.78]) and repeating (e.g., Going to the gym 3 days this week) vs. one-time (e.g., Going for a 30 minute walk today) (83% agreement, $\kappa = 0.49$ [95% CI: 0.25–0.74]). As the number of each type of goal per participant was not normally distributed, we report medians and inter-quartile ranges (IQRs) and assess associations with % weight loss using Spearman correlations. We use t-tests to compare average weight loss and number of goals and 1+ (vs. none) goal of each type. Participants (91% female; 91% non-Hispanic white) were on average 46.2 (SD: 10.5) years old with baseline BMI of 32.4 (SD: 4.8) kg/m². Average 12-week weight loss was 2.6% (SD: 3.5%). Participants posted a median of 4 (IQR 1–7) goals; 77% of participants posted >1 goal. Sharing more goals was associated with greater % weight loss ($p = 0.002$), but participants who shared 1+ goal did not lose more weight on average than those who shared no goals ($p = 0.10$). Of the 255 goals shared, 75% were quantifiable (30% of which were repeating) and 28% were repeating (82% of which were quantifiable). Sharing a greater number of quantifiable goals was associated with % weight loss ($p = 0.001$), and participants who shared 1+ quantifiable goal lost more weight on average ($p = 0.03$) than those who shared none. Sharing a greater number of repeating goals was associated with greater % weight loss ($p < 0.001$), and those who shared 1+ repeating goal lost more weight on average ($p = 0.003$) than those who shared none. Online weight loss programs provide objective data on how participants articulate their goals and intentions. Further research should explore how to best help participants set goals that are quantifiable and repeated in an online environment, and whether doing so improves their weight loss.

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Symposium 51

2:00 PM-3:15 PM

PLACE AND CANCER: EXPLORING THE IMPACT OF WHERE WE LIVE, WORK AND PLAY ON CANCER RISK AND OUTCOMES

Kimlin Ashing, PhD¹, Monica L. Baskin, PhD², Sabrina Ford, PhD³, Reginald Tucker-Seeley, ScD⁴, Kassandra I. Alcaraz, PhD, MPH⁵, Scarlett Lin. Gomez, PhD⁶, Chanita Hughes-Halbert, PhD⁷

¹City of Hope, Duarte, CA; ²University of Alabama at Birmingham, Birmingham, AL; ³Michigan State University, East Lansing, MI; ⁴University of Southern California, Los Angeles, CA; ⁵American Cancer Society, Atlanta, GA; ⁶University of California, San Francisco, San Francisco, CA; ⁷Medical University of South Carolina, Charleston, SC

Growing evidence of the impact of place – where people live, work and play – on cancer underscores the urgency of a symposium focused on the relationship between place and population disparities—cancer risk, incidence, prevalence, mortality and burden. In cancer research, examining place offers a necessary and profound opportunity for advancing the science of disease etiology, progression and outcomes -- by revealing a person's potential and actual cancer risk exposure, and barriers to prevention and treatment. Place and residential history significantly define neighborhood quality and resources; stress and quality of life, housing condition; tobacco, alcohol and substance consumption; food environments; chemical contaminants exposures; and accessibility and quality of healthcare resources. However, understanding these linkages can be complex and challenging.

In this symposium, a multidisciplinary panel of experts will highlight the epidemiological data and outcomes literature, as well as explore the underlying pathways, predictors, moderators, and mediators of place and cancer relevant to cancer risk outcomes and burden. Thus, the chair will introduce a broad, behavioral science perspective approach on place and cancer. The first presenter will discuss place and daily living risk, particularly on how place hinders healthy lifestyles. The second presenter will speak on place and cancer environmental risk, focusing on environmental carcinogenic exposure. The third presenter will explore methods and measurement considerations regarding place and financial well-being and how these affect cancer risk and outcomes. The fourth presenter will reflect on place and healthcare access, quality of care and survivorship. Finally, the fifth presenter will highlight the impact of place on risk, morbidity, mortality and survival. The discussant will synthesize and critically examine the state of the science presented, identifying potential challenges and opportunities to advance the field. The EMMH and Cancer SIGs partnered to bring together scientists and behavioral professionals from various disciplines to discuss the latest findings in the field, to foster interdisciplinary interactions, and to stimulate the development of new research in cancer, place and disparities. Discussion will attend to behavioral science inclusion and contribution to team science and multisectoral partnerships to better understand and address the vexing problem of place and cancer.

Symposium 51A

PLACE AND CANCER: EXPLORING THE IMPACT OF WHERE WE LIVE, WORK AND PLAY ON CANCER RISK AND OUTCOMES

Dr. Kimlin Ashing, PhD

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Symposium 51B

ROADBLOCKS TO HEALTHY LIFESTYLES ON THE JOURNEY TO BETTER HEALTH

Dr. Monica L. Baskin, PhD

Obesity is associated with 5 of the 10 most common cancers in the US and as many as 1 in 5 cancer deaths are related to excess weight. Poor nutrition and physical inactivity may also increase the risk of several cancers, independent of obesity. While these risks are not unique to any single population, racial/ethnic minorities, socioeconomically disadvantaged, and rural residents experience a greater cancer burden. Maintaining healthy lifestyles for cancer prevention or recurrence may be particularly challenging for these groups. Geographic disparity is explained, in part, by greater poverty and limited access to healthcare and health-promoting environments. Specifically, environments in which African Americans and rural residents live may pose barriers to healthy lifestyles due to the limited number of supermarkets and poor access to safe places to engage in physical activity. Larger food stores are more likely to stock healthy foods at lower cost. Similarly, light traffic, sidewalks, and safety from crime characterize neighborhoods with increased physical activity. This presentation will explore the intersection of race, place and cancer in describing barriers of participants in a lifestyle intervention in the rural Deep South. Participants were part of an academic-community partnership to reduce cancer disparities and involved the use of trained lay staff and volunteers to deliver the intervention in their local communities. A total of 409 African American women from rural communities in Alabama and Mississippi participated with over 27% of the total sample losing $\geq 5\%$ of their body weight at the end of the most intensive phase of the trial (6-months). Average participant weight loss in the multi-level group-based intervention was 3.2kg ($p < 0.001$) vs the traditional group-based intervention (2.2kg; $p < 0.001$). These findings are similar in weight loss magnitude among African Americans as published trials using more highly skilled interventionists; however, session attendance (often inhibited by transportation issues, family obligations, work schedules, etc.), family and friend support, perceived cultural norms, and access to health promoting environments mediated the impact of the intervention. Extending our reach to rural, lower-income, and racial/ethnic minority populations will require careful consideration and elimination of road blocks and potential detours to facilitate a successful journey to better health and cancer prevention.

Symposium 51C

ENVIRONMENTALLY RELATED CANCER IN RURAL “HOT SPOTS”: WHAT CAN WE LEARN?

Dr. Sabrina Ford, PhD

Geographic cancer clusters or “hot spots” are locales where cancer incidence rates are higher than the national averages for the United States (U.S.). Examining environmental toxins can assist us in identifying epidemiological factors related to cancer risk. Environmental toxins are defined as cancer causing agents that can be created or occur naturally in air, water, foods, etc. In the U.S., each state has its own diverse set of environmental risks that contribute to cancer incidence. More specifically, environmental risk factors can be concentrated in rural counties and small towns that affect a defined group of persons. In this presentation, the State of Michigan cancer rates will be explored to illustrate methodology for identifying environmental factors found in rural counties and towns with high rates of cancer incidence and the potential environmental contributors. Using evidence and statistics from the National Cancer Institute (NCI), American Cancer Society (ACS), Centers for Disease Control and Prevention (CDC), and Michigan Cancer Consortium, we will give an overview of rural hot spots in U.S. We will then describe, in detail, five rural counties in Michigan with distinct environmental risks for cancer and how they affect local populations. We will discuss how the delivery of toxins produced by rivers that flow through adjacent rural counties, urban auto factory residue, and chemical manufacturing present distinct differences in cancer risk. Urban toxic exposures are fairly similar across larger cities in the U.S., whereas rural exposure is often unique to geographic locale. Our methodology and findings can be generalized to other states, counties and small towns that are often overlooked because of the small number of cancer cases compared to more populous counties and towns. Understanding and describing environmental cancer risks contributing to cancer hot spots can inform public health providers and policy makers for designing and implementing intervention and prevention programs specific to rural populations.

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Symposium 51D

INDIVIDUAL AND NEIGHBORHOOD FINANCIAL WELL-BEING DURING CANCER SURVIVORSHIP

Reginald Tucker-Seeley, ScD

The cost of cancer care is rising faster than other diseases; and research has shown that the experience of recent financial hardship is associated with worse outcomes throughout survivorship, even beyond the negative outcomes associated with poverty. Discussions about the financial burden of cancer care have increased in recent years in the academic literature and popular press, and several terms have been used to describe this “burden.” Yet, the discussion oftentimes conflates the lack of *material* resources to cover medical expenses, the potential *psychosocial* distress accompanying the lack/reduction in financial resources, and the *behavioral* coping responses to address the lack /reduction in financial resources. In addition, the discussion of the neighborhood socioeconomic context is often used as a proxy for individual socioeconomic circumstances without a clear theoretical framework linking neighborhood environment to individual/household socioeconomic circumstances. More specifically, we currently lack adequate conceptualizations and operationalizations of the **material, psychosocial, and behavioral** aspects of individual and neighborhood financial well-being prior to, during, and following cancer care. This dearth in the operationalization of multilevel financial well-being during cancer survivorship impedes efforts to identify modifiable intervention targets of the financial burden of cancer care to ensure that families do not succumb to financial ruin as they manage a chronic disease and navigate the health care system. Research by the presenter and others focused on defining and measuring financial well-being at the individual/household and neighborhood level will be discussed.

Symposium 51E

THE INVISIBLE PLACE: ASSESSING AND ADDRESSING THE SOCIAL ENVIRONMENT TO ELIMINATE DISPARITIES IN CANCER

Dr. Kassandra I. Alcaraz, PhD, MPH

Although not always readily apparent, the social environment exerts significant and persistent influence on cancer-related perceptions, behavior, and outcomes. The unique social environment of socioeconomically disadvantaged or otherwise marginalized populations can be particularly influential in these populations, who often suffer disparities in cancer. Extending our conceptualization of “place” beyond the physical environment can inform and advance a new set of strategies to reduce disparities. The 2018 SBM meeting, focused on “Extending Our Reach,” presents an opportune time to discuss how the social environment can be used to both understand and address cancer disparities—beyond the healthcare sector. Despite strong evidence of social influences on health, we have yet to adequately understand and take advantage of the social environment in developing solutions to eliminate disparities. For example, social isolation is well-established as an independent risk factor for premature death on par with other risk factors such as physical inactivity, obesity, and lack of healthcare access. However, such work has not translated to the development of efficacious and scalable behavioral interventions for the socially isolated. Fortunately, the emergence of new research frontiers, communication technologies, and multi-sectoral partnerships hold promise for overcoming this and other challenges. This presentation will discuss the social environment and cancer disparities across four interrelated domains: 1) framework for assessing, understanding, and addressing the social environment of medically vulnerable populations; 2) evidence of socio-environmental influences on disparities in cancer; 3) innovative cross-sectoral approaches for leveraging and/or enhancing the social environment to develop and disseminate disparity-reducing behavioral interventions; and 4) recommendations for future research. The discussion seeks to stimulate a focused plan of action for proactively considering and integrating socio-environmental factors in efforts to reduce cancer disparities and mortality in the United States.

Symposium 51F

PLACE AND CANCER RISK AND SURVIVAL: DOES CONTEXT MATTER?

Dr. Scarlett Lin. Gomez, PhD

Where people live, work, and play has been shown to impact health behaviors and a number of health outcomes including overall mortality. However, until recently, research on neighborhood factors and cancer risk and survival has been relatively sparse. In recent years, there has been a greater conceptual appreciation for the importance of place on its influences on cancer outcomes across the continuum, from prevention to mortality. The development of geospatial methods and tools, and geostatistical models have also helped to fuel the expansion of research in this area. In this presentation, we will provide an overview of the epidemiological data on neighborhood characteristics, focusing on social and built environment factors, on cancer risk, survival and mortality. We will discuss the methodological challenges and opportunities to advance research in this area.

Symposium 52

2:00 PM-3:15 PM

USING MHEALTH AND EHEALTH INTERVENTIONS TO REDUCE HEALTH DISPARITIES: FROM CANCER PREVENTION TO CANCER SURVIVORSHIP

Shannon M. Christy, PhD¹, Brian D. Gonzalez, Ph.D.², Leah A. Carter, M.Ed.³, Claire A. Spears, Ph.D.⁴, Betina Yanez, Ph.D.⁵¹University of Tennessee Health Science Center, Memphis, TN; ²Moffitt Cancer Center, Tampa, FL; ³Pennington Biomedical Research Center, Baton Rouge, LA; ⁴Georgia State University School of Public Health, Atlanta, GA; ⁵Northwestern University Feinberg School of Medicine, Chicago, IL

Health disparities affect racial and ethnic minorities and medically underserved individuals throughout the United States. Such disparities are evident across the cancer continuum from engagement in cancer preventive behaviors (e.g., cancer screening behaviors, physical activity) and cancer risk behaviors (e.g., smoking) to morbidity, quality of life, and mortality. mHealth and eHealth technologies have the potential to promote cancer preventive behaviors and to reduce cancer risk behaviors prior to the development of cancer as well as to improve quality of life and symptom management among cancer survivors. Using these technologies, interventions can be tailored for an individual, targeted to specific populations, and provided in real time. As the vast majority of adults in the United States use the internet and own a mobile phone, mHealth and eHealth technologies may be a means of successfully impacting cancer health disparities. In particular, these approaches could reduce some of the barriers (e.g., cost and transportation) that often limit access to services for underserved populations. However, few mHealth and eHealth interventions have focused specifically upon populations impacted by health disparities. In this symposium, the speakers will present findings on the development, feasibility, and acceptability of technology-based applications aimed at reducing cancer health disparities as well as offer suggestions and lessons learned. The first speaker will present data on the development of a culturally-targeted mHealth application focused upon encouraging physical activity among African American men. The second speaker will share the findings of a text messaging intervention for promoting smoking cessation among low-income, predominantly African American smokers. The final speaker will present data on the feasibility of an eHealth intervention aimed at improving knowledge and quality of life among Hispanic breast cancer survivors. Finally, the Discussant will provide insight into some of the promises and potential challenges of mHealth and eHealth technologies for reducing cancer health disparities.

Symposium 52A

A MOBILE PHONE-BASED PHYSICAL ACTIVITY MAINTENANCE APP FOR AFRICAN AMERICAN MEN: MOBILEMEN

Ms. Leah A. Carter, M.Ed.

Background: Physical activity (PA) is a modifiable risk factor for those cancers frequently afflicting African Americans. There is a need to tailor PA interventions towards African American men because they have unique gender role beliefs which influence exercise promotion. African American men perceive mobile technology as an acceptable means of intervention delivery. The purpose of this proposal is to develop a PA maintenance mobile phone application for African American men (*MobileMen*).

Methods: The development of the mobile application took place in three phases. First, iterative focus groups with African American men were conducted to determine interest and guide development of *MobileMen* content, design, and aesthetics to fully develop a functioning prototype of the mobile app. Second, lab usability testing was conducted to test the app's functionality and ease of use. Third, field usability was conducted to assess practical usability and satisfaction with the prototype version of the app.

Results: There were 25 African American men who took part in 4 focus groups. The men indicated that an app specifically developed for African American men was appropriate. There was acceptance of the feedback, lesson content, and reward system in the app. Additional components desired included monitoring dietary habits and personal health parameters, as these were seen as consistent with increasing physical activity. There were 18 African American men who took part in 3 usability sessions. Overall, the app was deemed user friendly. A functional app has been developed that includes self-monitoring, rewards, feedback, and behavioral content tailored to African American men. Ten African American men will utilize the app for one month to determine practical usability and satisfaction.

Conclusions: Thus far, the concept of an app designed specifically for African American men is acceptable and the app has been determined to be feasible to fully develop. To our knowledge, no study has utilized mobile phones as a means of effecting PA levels in African American men. In this way, *MobileMen* will address an unmet need as it will be the first smartphone app that is targeted toward PA maintenance in African American men.

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Symposium 52B

EXPERIENCES WITH TEXT MESSAGING FOR SMOKING CESSATION AMONG LOW-INCOME, PRIMARILY AFRICAN AMERICAN SMOKERS

Dr. Claire A. Spears, Ph.D.

Mobile health technologies offer tremendous promise for providing personalized, just-in-time support for health behavior change. Accumulating evidence supports the efficacy of text messaging for smoking cessation, and between-session text support could enhance effects of in-person interventions. Research is needed to understand users' experiences with these programs and inform the development of more engaging and effective interventions, particularly for underserved populations affected by tobacco-related health disparities. This feasibility study examined user experiences with text messaging as part of an 8-week smoking cessation treatment among low-income, primarily African American smokers. Thirty-eight adult smokers (45% female, 90% African American, 70% total family annual income <\$24,000) enrolled in a mindfulness-based smoking cessation program that involved 8 weeks of in-person group counseling and between-session text messages (1–7 messages per day, with higher frequency around the quit date). Text messages provided motivation, coping strategies, and personalized reminders of reasons for quitting. The program was designed to be interactive (e.g., participants were asked questions and encouraged to text CRAVE, STRESS, or SLIP keywords as needed for additional support). Participants completed questionnaires each week and at 1-month follow-up to provide feedback about text messages. Most (90%) participants responded via text, and 58% used keywords. The majority (92%) indicated reading all or most text messages. On a scale from 1–10 (1=not at all helpful, 10=extremely helpful), participants' average rating of text helpfulness was 8.1 ($SD=2.4$). Most (62%) indicated receiving about the right number of texts; 27% preferred fewer and 12% preferred more. When asked what was most helpful, participants noted the encouragement, positive feedback, and personalized reminders. When asked what they disliked and suggestions for improvement, most participants responded "N/A" or "nothing." Of those who provided feedback, some suggested sending more frequent text messages, some suggested fewer texts, and some suggested including more personalization. The research team also noted some logistical issues (e.g., participants changing phone numbers or experiencing service interruptions). Overall, results provide support for feasibility and offer practical suggestions for using text messaging to enhance smoking cessation programs among low-income African American smokers.

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Symposium 52C

MY GUIDE: AN E-HEALTH INTERVENTION TO IMPROVE PATIENT-CENTERED OUTCOMES AMONG HISPANIC BREAST CANCER SURVIVORS

Betina Yanez, Ph.D.

Background: Breast cancer (BC) is the most commonly diagnosed type of cancer among Hispanic women living in the U.S., and relative to non-Hispanic white women, Hispanic women report poorer quality of life (QOL) after treatment. Smartphone interventions are a viable approach for addressing healthcare accessibility issues and improving QOL outcomes among cancer survivors, especially among Hispanics with documented increased levels of Internet use for accessing health information. This abstract describes the development and preliminary feasibility of My Guide, a patient-centered smartphone application.

Methods: Eligibility criteria for participants included: English or Spanish-speaking Hispanic/Latina women breast cancer survivors, diagnosis of non-metastatic breast cancer, completed active treatment within the past two years. Hispanic survivors were enrolled in a 4-week intervention to assess the satisfaction and demand for the My Guide application. Participants completed measures on user satisfaction and breast cancer knowledge and were encouraged to use the application each week and were assigned to weekly telecoaching calls. The My Guide application was organized into six modules that incorporated psychosocial education and behavioral elements from the literature as well as feedback from community stakeholders, human-computer interaction and Smartphone application design experts, and investigators with ample experience conducting research with Hispanic breast cancer survivors.

Results: Participants were 25 Hispanic breast cancer survivors. Sixty-eight percent of the sample had a high school education or less. Ninety percent of participants enrolled in the My Guide feasibility trial and the retention was also 90%. The mean number of hours spent using the application across the 4 weeks was 9.25 hours ($SD=7.83$). The mean score on the satisfaction survey was 65.91 (range 42–70, $SD=5.89$), in which higher scores reflect greater satisfaction with the My Guide application. Participants' scores on the Breast Cancer Knowledge Questionnaire improved from study baseline ($M = 9.5$, $SD = 2.92$) to the post-intervention assessment ($M = 11.14$, $SD = 2.66$); $t(21) = -3.12$, $p = .002$, $d = .59$.

Conclusions: Study findings provide preliminary evidence for the feasibility of a Smartphone-based intervention for Hispanic breast cancer survivors. Future work is needed to establish the efficacy of My Guide for Hispanic breast cancer survivors.

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Symposium 53

2:00 PM-3:15 PM

HOW SERVICE DESIGN UNLOCKS THE POTENTIAL OF DIGITAL HEALTH

Ellen Beckjord, PhD, MPH¹, Emily Lattie, PhD², Kristin McCall-Kiley, MSW, MASD³, Charles Jonassaint, PhD MHS⁴, Eric Hekler, Temp⁵

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How are innovations in digital health successfully integrated into a clinical service? Though important work continues on creating and testing digital health tools, many digital health innovations cannot reach their full potential to positively impact health behavior and outcomes until they are integrated into the delivery of health care. Service design is a discipline specifically concerned with this process. It considers care providers as critical users in digital health and surfaces insights required to allow people and technology to interact in ways that elevate the impact of both. Our first presentation will focus on the integration of a digital tool for pain management in a sickle cell clinic. Next, we will discuss the design of a technology-enabled mental health service for integration within a multi-clinic accountable care organization. The third presentation will describe the service design research done to support integration of a mobile application for health behavior change into the health coaching service of a health insurer. Our Discussant will discuss the implications of service design on how to create, optimize, and repurpose useful and usable tools for behavior change and corresponding usable evidence, with a particular focus on discussing linkages between human-centered design, optimization, and implementation science.

Symposium 53A

DESIGNING TECHNOLOGY ENABLED MENTAL HEALTH SERVICES FOR VALUE BASED CARE

Emily Lattie, PhD

Technology-enabled mental health services, such as those delivered via web-based or app-based platforms, offer the possibility of greatly expanding the reach of service provision. These types of programs have demonstrated efficacy in clinical trials, yet efforts to implement these types of programs into care settings have not been successful. There has been a problem with the design of these programs, which has focused primarily on the technology components and not the design of the clinical service. Further, these programs often face implementation challenges in care organizations following a fee-for-service financial model, as this model does not typically incentivize organizations to adopt technology-enabled mental health services.

Our research group recently proposed the Accelerated Creation-to-Sustainment (ACTS) model, which draws upon methods from human-computer interaction and implementation science to iteratively design and evaluate a technology-enabled mental health service within a care setting. In this presentation, we will discuss our initial work towards developing such a service, following the ACTS model, for a value based care organization that serves more than 200,000 patients. The value-based care organization identified their centralized Care Management service, which works closely with Primary Care, as being the best “fit” for a technology-enabled mental health service. The care managers ($n = 13$) already provide remote-delivered services for patients, with a primary focus on identifying potential barriers to care that may impact patients' abilities to achieve their health goals, and then strategizing ways to overcome those barriers. Quantitative and qualitative analyses of surveys and interviews have indicated that care managers work with patients who have a high rate of common mental health problems, and care managers are eager to receive additional training and resources for the management of these mental health problems. Methods for embedding technology-enabled mental health programs into the care management workflow have been identified, and ongoing work is being conducted with administrative and patient stakeholders.

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Symposium 53B

ODYSSEY: A CASE STUDY IN THE UTILIZATION OF SERVICE DESIGN FOR BETTER MEMBER HEALTH & BUSINESS OUTCOMES

Kristin McCall-Kiley, MSW, MASD

Health needs around stress, smoking, and weight effect a vast majority of people in the population that UPMC serves. Traditionally, UPMC served these needs through a paper workbook or a web-based system in which a member looking to manage their stress, smoking, or weight would choose to participate in the type of service with or without a health coach assisting them through the program. UPMC saw the opportunity to both improve the experience and outcomes for those with these health needs while also optimizing the process model for delivering the experience at scale. To do this, UPMC designed an integrated mobile application and service offering using innovation methodologies including: 1) agile, 2) service design, and 3) human-centered design. The team used human-centered design over agile sprints to deeply, yet quickly, understand the experience and needs of those who would benefit from the app and care providers alike (in this case health coaches). Secondary research consisted of analogous situations and environmental scan of digital behavioral health services. The primary service design research consisted of: 1) interviews with health coaches and business leaders to uncover the existing service blueprint and 2) co-design sessions with members and health coaches to collaboratively discover the technology-enhanced service blueprint. The outputs of which were mapping the existing experience journey and business processes from these perspectives (i.e., a service design blueprint). This uncovered key moments of opportunity that quickly assessed the organization's ability to deliver. The team then employed lean-startup methodologies to prototype the new service (and its assumptions) in the form of a test run in November. Insights from the monitoring and evaluation of the test run provided the second iteration of the technology-enhanced service. The team then launched a larger service pilot in January with the revised version of the service. Pairing evidence-based practices in behavioral health with innovation methods has increased the ability to scale the life improvement services to our members.

Symposium 53C

ODYSSEY: A CASE STUDY IN THE UTILIZATION OF SERVICE DESIGN FOR BETTER MEMBER HEALTH & BUSINESS OUTCOMES

Dr. Charles Jonassaint, PhD MHS

Pain is the most common medical symptom requiring care. Over 80% of patients presenting for a physician visit report pain as a primary complaint, however, 80% of those patients receive inadequate treatment for their pain. Accurate assessment and diagnosis of pain is necessary to provide appropriate pain treatment and quality care, yet the current methods for assessing pain are sorely inadequate. Pain assessment tools are either too long and complex for point of care or too simplistic to capture the dynamic pain experience. To address this, we developed Painimation, a novel tool that uses graphic visualizations and animations, instead of words or numeric scales, to assess pain quality, intensity, and course. This presentation will provide an overview of the human-centered design approach that led to the concept of using abstract animations to measure pain and the preliminary data examining the utility and validity of Painimation in a chronic pain medicine clinic.

Through a series of interviews that included contextual inquiry, think-aloud protocols and guided story-telling, we identified patient needs and barriers to effectively communicating their pain experience. We developed a preliminary set of animations and a beta version of the Painimation app that went through user testing. The finalized version of the Painimation app was then tested among 207 adult patients receiving treatment for pain and who reported pain more days than not for at least 3 months. Using a tablet computer, participating patients completed the Painimation instrument, the McGill Pain Questionnaire (MPQ), and the PainDETECT questionnaire for neuropathic symptoms. Participants (N = 207), completed Painimation and indicated it was useful for describing their pain (mean=4/5 on a usefulness scale), and 75% agreed or strongly agreed that they would use Painimation to communicate with their providers. Animations selected corresponded with pain adjectives endorsed on the MPQ. Further, selection of the electrifying animation was associated with self-report neuropathic pain ($r=.16$), similar to the association between neuropathic pain and PainDETECT ($r=.17$). Painimation was associated with PainDETECT ($r=.35$).

Using animations may be a faster, more patient-centered, and accurate method for assessing pain that is not limited by age, literacy-level, or language. This presentation highlights the advantages of human-centered design in the implementation of health care technologies.

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Symposium 54

2:00 PM-3:15 PM

THE ANNUAL WELLNESS VISIT: IMPLEMENTATION IN REAL WORLD SETTINGS AND COST BENEFITS

Barbara Resnick, PhD, CRNP¹, Natalia Loskutova, MD, PhD², Sherri Sheinfeld Gorin, PHD³, Debra Ritzwoller, PhD⁴, Barbara Resnick, PhD, CRNP¹

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The Medicare Annual Wellness Visit (AWV) was introduced in 2011 as part of the Medicare Part B expansion under the Affordable Care Act. The AWV was promoted to encourage preventive care and mitigate health risks in aging patients through required age-appropriate and risk modifying screenings and assessments. It does not include a comprehensive physical exam. Rather it incorporates vital signs such as height, weight and blood pressure, assessments of cognition, mood, balance, vision, hearing, falls risks, immunizations, cancer screenings, and advanced directives. Unfortunately, the implementation of the AWV has been relatively low nationally and relatively little is known about the benefits of the AWV in patient outcomes and costs. The percentage of beneficiaries receiving an AWV increased from 7.5% in 2011 to only 15.6 by 2014. Generally, those who were White, lived in urban, higher-income areas, and had one to two comorbidities were more likely to receive an AWV than others. Challenges to implementation of the AWV include: lack of knowledge among providers about how to perform, document, and bill for the AWV; acute medical problems taking priority over prevention; and lack of interest on the part of patients. Outcomes associated with implementation of AWV have included; medication adjustments; increased adherence to vaccinations; and improved cancer screening and screening for diabetes and hyperlipidemia. For practices, the AWV is revenue-generating and patients seem to respond positively to the AWV experience. While the AWV provides an opportunity to better prevent and manage disease, there is insufficient provider team assessment and followup to facilitate either near-or longer-term behavior change. Moreover, little is being done to apply the findings from the AWV to facilitate physical activity and dietary counseling, to followup on positive findings from cancer screening, or to reduce falls. And, only 10% of older adults who receive an AWV are screened for depression. The purposes of this symposium are to: provide a comprehensive review of the AWV; describe the innovative implementation of the AWV in a real-life setting; summarize AWV cognitive assessments; address the cost implications of the AWV; and to discuss the opportunities for implementing behavior change through the AWV. The findings from this symposium will be developed into a Policy Brief with the Gerontological Society of America.

Symposium

54A

THE COGNITIVE ASPECTS OF THE ANNUAL WELLNESS VISIT

Natalia Loskutova, MD, PhD

Early and timely recognition of cognitive decline shows clear benefits from disease management, ethical, safety and financial planning perspectives. Evidence, however, highlights a significant diagnosis gap in dementia with the majority of dementia patients in primary care never receiving a diagnosis of dementia. Assessment of cognitive impairment is a required component of the AWV. Ultimately, the goals of this AWV component is to improve detection and diagnosis of dementia. We have evaluated 2,999,338 electronic health records of individuals 65 and older for evidence of the AWV and documented diagnosis of dementia of any type from 2011 to 2015. Overall, we identified 3,859 records of completed AWV (G0438 and G0439), that represented 0.08% of all documented visits. Of those, Welcome to Medicare AWV (G0438) constituted on average 22.5% of all AWVs. The overall 5-year average dementia diagnosis rate was $0.51 \pm 0.51\%$ with a demonstrated gradual increased over time. The rates of dementia detection correlated significantly with the total number of visits ($r=0.97$, $p=0.007$) and with the number of AWVs ($r=0.90$, $p=0.04$). Despite a relative paucity of evidence on the performance of the AWV approach on improved dementia detection and subsequent care and several implementation barriers, the AWV provides the only sustainable and regular opportunity to establish a baseline measurement and identify changes in cognitive status over time. Several recommendations and resources have been developed to address the implementation challenges of cognitive assessment during the AWV including algorithms for assessing cognition in primary care, recommendations on screening tools and documentation and reimbursement guides for services and procedures related to cognitive impairment. Health care providers should make a greater effort to identify patients who skip the annual AWV and encourage them to utilize this benefit, otherwise they miss the opportunity to conduct regular cognitive assessments. Additionally, underutilization of AWV may lead to lost opportunities to alter behaviors that can help optimize cognitive function such as exercise and other healthy behaviors such as smoking cessation and moderation of alcohol intake.

Symposium 54B

DISCUSSANT THE ANNUAL WELLNESS VISIT: IMPLEMENTATION IN REAL WORLD SETTINGS AND COST BENEFITS

Sherri Sheinfeld Gorin, PHD

The discussant will provide a synthesis of the presentations around the Annual Wellness Visit.

The AWV was promoted as a way to encourage preventive care and mitigate health risks in aging patients through required age-appropriate and risk modifying screenings and assessments. Unfortunately, the implementation of the AWV has been relatively low nationally; further, little is known about the benefits of the AWV from either a patient quality of life perspective or by comparing its costs and benefits. The percentage of beneficiaries receiving an AWV increased from 7.5% in 2011 to only 15.6 by 2014. For practices, the AWV is revenue-generating and patients seem to respond positively to the AWV experience. While the AWV provides a critical opportunity to reduce risks for diabetes and hyperlipidemia, for example, through physical activity and dietary counseling, and the detection of cancer, there is insufficient provider team assessment and followup to facilitate either near-or longer-term behavior change. And, only 10% of older adults who receive an AWV are screened for depression. Moreover, little is being done to apply the findings from the AWV to facilitate behavior change through physical activity and dietary counseling, to followup on positive findings from cancer screening, or to reduce falls. The purposes of this symposium are to: provide a comprehensive review of the AWV; describe the innovative implementation of the AWV in a real-life setting; summarize AWV cognitive assessments; address the cost implications of the AWV; and to discuss the opportunities for implementing behavior change through the AWV. The Centers for Medicare and Medicaid Services is evaluating the AWV, so, alongside our GSA partners, the findings of the symposium could have policy impact on enhanced health among older adults.

Symposium 54C

THE ANNUAL WELLNESS VISIT: RESOURCE AND COST IMPLICATIONS ASSOCIATED WITH IMPLEMENTATION

Debra Ritzwoller, PhD

Consensus generally exists regarding the value of broad implementation of USPSTF prevention guidelines for regular screening and counseling of Medicare age-eligible patients who receive care in community settings. However, at both the provider and practice level, resources, costs, and reimbursement issues may generate disincentives for adoption. The ACA's Medicare Part B coverage expansion that included the Annual Wellness Visit (AWV) which includes a Health Risk Assessment (HRA) and a personal prevention plan (PPP), often requires changes in practice workflows, personnel resources, and informatics capacity.

A recent evaluation of the implementation of an HRA known as My Own Health Report (MOHR) across nine geographically dispersed, heterogeneous primary care practices showed that completion rates were highest (75.3%) for practices that employed electronic devices loaded with the questionnaire and given to patients in the waiting area versus mailings with web-based links (26.2%), phone based (64.2%), or paper surveys in the waiting room (33.9%). Costs per patient completing MOHR varied substantially based on the methods used by the practice. However, no long-term follow-up data is available regarding the effectiveness of the use of MOHR.

In order to maximize the HRA completion rates and to generate a patient specific PPP, in 2011 to 2012, Kaiser Permanente Colorado (KPCO) exploited their EHR and information technology infrastructure to comprehensively implement the AWV using methods that included novel EHR and information technology approaches including: 1) use of interactive voice response (patients call a number and are guided through the HRA questions); 2) a secure email is sent with an embedded link to the HRA; 3) an AWV "smart set" is embedded in the EHR and is used at the visit to electronically generate (and email) the PPP. To date, approximately 50% of eligible patients have completed at least one AWV with HRA. Approximately 65% of patients trigger a positive for at least one condition and participation in prevention strategies including the KPCO "Better Balance Class," has been high. No cost-effectiveness data are currently available.

In order to better align reimbursement strategies by payers, comprehensive evaluations associated with effective and feasible implementation strategies for AWV are needed to assess implementation resources and costs and downstream costs. We will address potential ways in which to gather this data.

Symposium 54D

THE ANNUAL WELLNESS VISIT: WHAT IT IS AND HOW IT CAN BE DONE IN PRIMARY CARE

Ms. Barbara Resnick, PhD, CRNP

The Annual Wellness Visit (AWV) includes a health risk assessment and customized wellness or personal prevention plan for Medicare beneficiaries. The AWV supplements the "Welcome to Medicare" preventive visit which is a one-time comprehensive health assessment for those who initially enroll into Medicare. The AWV is provided by a primary care provider (or under the direction of primary care provider) and should include at least a history, basic assessments of height, weight, blood pressure, preventive screening and personalized health planning. The focus is to identify chronic disease, injury risks, modifiable risk factors and urgent health needs of an individual. The focus is on physical function, psychosocial risks, cognitive function, depression, life satisfaction, loneliness, pain, fatigue, behavioral risks (tobacco and alcohol use), physical activity, nutrition, oral health, sexual health, home and motor vehicle safety, activities of daily living, and instrumental activities of daily living. Realistically, to complete an AWV, short screening tools must be used and referrals made as needed for more comprehensive screening or management of problems once identified. Within a Continuing Care Retirement Community primary care practice AWVs are done during the birthday month of the resident and include basic assessments as noted, the Mini-cog, the PHQ-2, review of smoking, alcohol use, driving status, the Barthel Index and Lawton's Instrumental Activities of Daily Living, review of medication, time spent in physical activity, screening for cardiovascular risks and cancer screening as appropriate are reviewed, lastly medications and advanced directives are reviewed and updated as appropriate. Behavior change interventions are implemented using social cognitive theory. Outcomes associated with AWV include 100% adherence to completion of advanced directives, decreased number of inappropriate cancer screenings, increased physical activity and use of the exercise activities within the facility, and increased awareness of mental health issues among the residents and facilitation of treatment such as cognitive training techniques with speech therapy and counseling for depression with psychology. The AWV allows for a focused review of critically important health issues for older adults prior to an acute event occurring such as a motor vehicle accident or an acute delirium.

Symposium 55

2:00 PM-3:15 PM

NOVEL ANALYTIC APPROACHES TO VARIANCE MODELING IN ECOLOGICAL MOMENTARY ASSESSMENT STUDIES OF PHYSICAL ACTIVITY

Jaclyn P. Maher, Ph.D.¹, Genevieve F. Dunton, PhD, MPH², Chih-Hsiang Yang, PhD³, David Williams, Ph.D.⁴

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The use of Ecological Momentary Assessment (EMA) in physical activity research is growing rapidly as real-time data capture methods supply novel insights into antecedents and consequences of this behavior in naturalistic settings. EMA is particularly well-suited to address these questions because it collects real time information on time-varying constructs multiple times per day. By doing so, EMA is able to capture changes in time-varying variables (e.g., mood, stress), which may be concealed by retrospective summary measures. Time-varying variables can also be aggregated into conceptually and theoretically relevant indicators at the level of the person, including subject-level variances (e.g., how erratic is a subject's mood across occasions?), and subject-level slopes (e.g., is a subject's mood related to physical activity across occasions?). However, little is known about the effects of subject-level parameters (i.e., variances and slopes) of time-varying variables on overall subject-level health outcomes and behavior. The presentations in this symposium will describe a novel analytic approach to variance modeling in EMA research. This approach tests a joint statistical model through the standalone software program, MIXWILD, that allows the random effects of time-varying psychological and contextual factors (i.e., subject-level variances and slopes) to influence overall subject-level health-related outcomes and behavior such as usual physical activity levels and weight status. The first presentation will explore associations between subject-level variability in negative affect with body movement and posture in college students. The second presentation will examine the extent to which subject-level variability daily physical activity is associated with mental health profiles among normal weight, overweight, and obese adults. The third presentation will focus on the degree to which affective responses to physical activity (i.e., subject-level slopes) and subject-level affective variability influence weight status among children and adults. Overall, these presentations will show that applying novel analytic approaches to EMA data facilitates the advancement of theoretical frameworks to explain health behaviors as well as identifies opportunities for tailoring interventions. The discussant will address both the specific contributions of these presentations and the broader role of modeling subject-level variances and slopes in physical activity research.

Symposium 55A

GREATER DAY-TO-DAY VARIABILITY IN PHYSICAL ACTIVITY IS ASSOCIATED WITH POORER MENTAL HEALTH PROFILES AMONG OBESE ADULTS

Jaelyn P. Maher, Ph.D.

U.S. Federal Physical Activity Guidelines outline specific recommendations regarding the duration and intensity of aerobic physical activity (PA) accumulated across the week to gain substantial health benefits, but guidelines are less clear about the recommended frequency of aerobic PA. Research is mixed about whether PA should be performed every day or whether it can be done less frequently, but in longer bouts. To address these questions, research is needed on the physical and mental health effects of day-to-day variability in PA. The current study examined the extent to which day-to-day variability in PA is associated with adults' mental health, and if this association differs by Body Mass Index (BMI). Adults ($N = 116$) completed three waves of data collection (each lasting 4 days) during which participants completed a questionnaire assessing aspects of mental health (i.e., life satisfaction, depressive symptoms, perceived stress), wore a waist accelerometer, and had height/weight measured. This study employed a novel two-stage data analysis approach using the standalone program, MIXWILD. The first-stage model predicted mean level as well as between-subject and within-subject variances in daily PA. This first-stage model estimated a random location (i.e., subject-level means) and a random scale (i.e., subject-level variability) effect for daily PA. In the second stage, these random subject effects (i.e., location and scale) for daily PA, along with their interactions with BMI, predicted subject-level mental health outcomes. Results from the two-stage approach revealed that the association between subject-level variability (i.e., random scale) in daily PA and mental health outcomes significantly differed depending on adults' BMI (i.e., life satisfaction: $\beta = -0.05$, $p < 0.05$; depressive symptoms: $\beta = 0.03$, $p < 0.05$; perceived stress: $\beta = 0.04$, $p < 0.01$). Greater day-to-day variability in PA levels was associated with poorer mental health to a greater extent in obese adults as compared to non-obese adults. For obese individuals, inconsistent activity patterns may have consequences (e.g., muscle soreness, intermittent mood benefits) that ultimately detract from mental health profiles. Behavior change strategies that promote consistency in daily PA may be particularly useful for obese individuals to not only increase PA but to enhance mental health.

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Symposium 55B

AFFECTIVE RESPONSE TO PHYSICAL ACTIVITY AND AFFECTIVE INSTABILITY PREDICT OBESITY RISK

Dr. Genevieve F. Dunton, PhD, MPH

Background: Research is growing on the role of affective processes in physical activity and obesity risk. However, research is lacking on whether affective response to physical activity (i.e., association between physical activity and subsequent momentary positive affect) and levels of affective instability (i.e., variability, fluctuation) contribute to obesity risk.

Objective: The current study used Ecological Momentary Assessment (EMA) to examine whether having (1) a greater positive affective response to physical activity and (2) lower positive affective variability reduce obesity risk.

Methods: This analysis pooled data from four EMA studies (age range: 8–73 years) with objective ambulatory monitoring via waist-worn accelerometry ($n=589$). Momentary positive affect was assessed through randomly-prompted EMA surveys occurring several times per day across 4–7 days. Positive affect levels were matched to moderate-to-vigorous physical activity (MVPA) measured by accelerometer in the 30 min. before each EMA survey to capture affective response. Height and weight were measured. This study employed a novel two-stage data analysis approach using a new software program called MIXWILD. In the first stage, a multilevel model (occasions nested within people) estimated random location (i.e., subject-level mean), random scale (i.e., subject-level variability), and random slope (i.e., subject-level association with past 30-min MVPA) effects for momentary reports of positive affect. In the second stage, a single-level logistic regression model tested whether the random subject effects (i.e., location, scale, and slope) of momentary positive affect predicted the odds of being obese (vs. not obese) after controlling for age and sex.

Results: Subject-level mean (i.e. location) of positive affect was not associated with obesity risk ($\beta=-0.05$, $p=0.67$). Lower subject-level variability (i.e., scale) in positive affect ($\beta=0.30$, $p=.02$) and greater positive affective response to physical activity (i.e., slope) ($\beta=-0.84$, $p=.01$) were associated with lower obesity risk.

Conclusion: Fluctuating levels of positive affect were shown to be more obesogenic than chronically low levels of positive affect. Having a greater momentary positive affective response to physical activity may also reduce obesity risk by reinforcing the motivation to be physically active.

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Symposium 55C

EXAMINING THE INTERPLAY BETWEEN MEAN AND VARIABILITY OF MOMENTARY NEGATIVE AFFECT IN PREDICTING EVERYDAY ACTIVITY AMONG COLLEGE STUDENTS

Chih-Hsiang Yang, PhD

Behavioral patterns developed during college have profound influence on health consequences in later adulthood. Previous research among college students has indicated that both usual (between-person) and momentary (within-person) levels of negative affect are associated with physical activity. To date there has been limited work investigating the interaction between variability and overall levels of momentary negative affect in predicting daily time spent in different daily activities/postures. Students experiencing similar fluctuations in momentary negative affect may have different time allocations in daily activities/postures depending on their average levels of momentary negative affect. This study aimed to examine the moderation effect of average negative affect on the relation between variations in negative affect and time spent in daily activities/postures. College students ($N = 158$) completed a consecutive 14-day ecological momentary assessment (EMA) study rating their real-time activities/postures (i.e., sitting/standing/moving) and their contemporary levels of negative affect (i.e., stress/anxiety/displeasure) via a smart-phone application. This study employed a novel two-stage data analysis approach using the standalone program, MIXWILD. The first stage model estimated a random location (subject-level average) and a random scale (subject-level variability) for momentary negative affect. In the second stage, the random subject effects and the interaction between them were used as regressors in predicting proportions (%) of sitting, standing, and moving responses in separate subject-level regression models. After controlling for age and gender, the interaction between mean (location) and variability (scale) of momentary negative affect was significantly associated with the proportion of moving responses ($\beta = -1.44, p = .04$). High variability in negative affect was negatively associated with behavior when college students experienced high mean levels of momentary negative affect. This interaction effect remained robust after 500 times of resampling ($\beta = -1.90, p = .05$). None of the main or interaction effects were significant in predicting proportion of sitting or standing responses. The unfolding of intraindividual variations in momentary negative affect may improve our understanding of the role of affect in regulating physical activity in the context of everyday life. Results from this study also may provide useful information for health professionals in developing affective strategies to promote health and well-being among college students.

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Symposium 56

2:00 PM-3:15 PM

WHAT DRIVES PROBLEMATIC EATING IN ADULTS WITH OBESITY OR BINGE EATING? A SERIES OF EMA INVESTIGATIONS

Leah Schumacher, MS¹, J. Graham Thomas, PhD², Kathryn Smith, Ph.D.³, Stephanie Manasse, PhD¹, Kathryn Godfrey, PhD¹

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Obesity and binge eating are common among American adults and are associated with poorer physical and mental health. Many individuals with binge eating and obesity report eating in response to affective and internal physical states (e.g., hunger, fatigue), yet research on the relations between these experiences and eating has been mixed. This is true even for studies that use ecological momentary assessment (EMA) to assess participants' internal experiences and eating episodes in real-time and in participants' natural environments. It is critical to improve our understanding of the relationships between internal experiences and eating episodes to optimize interventions for weight management and binge eating. This symposium features three presentations that elucidate important considerations in understanding the link between affective/internal physical states and eating behavior among adults with obesity and binge eating. Dr. Kathryn Smith will begin by discussing how the valence (i.e., positive versus negative) and stability (i.e., state versus trait) of affect differentially predict binge eating and dietary restraint among adults with obesity. Dr. Stephanie Manasse will then discuss how the relationship between internal states and dietary lapses may be moderated by important person-level variables, such as one's degree of impulsivity and the presence of loss-of-control eating. Finally, given the potential limitations of participant self-reports of both affective/internal states and the occurrence of potentially problematic eating episodes, Dr. Kathryn Godfrey will present results from a study that assessed the feasibility of incorporating psychophysiological measures of stress and a smartphone application for photographing food into EMA among a sample of individuals with binge eating. Dr. J. Graham Thomas will conclude the symposium by discussing how the present studies expand on and help to clarify the complex relationships between internal experiences and eating among individuals with binge eating and obesity. Key next steps for utilizing EMA and other technology to assess and ultimately intervene on triggers of problematic eating behavior in these populations also will be discussed.

Symposium 56A

STATE AND TRAIT NEGATIVE AND POSITIVE AFFECT DIFFERENTIALLY PREDICT BINGE EATING AND RESTRAINT IN OBESITY

Dr. Kathryn Smith, Ph.D.

Negative affect (NA) has been implicated in the onset and maintenance of binge eating, a behavior that is also common among individuals with obesity. While dietary restraint (i.e., cognitive effort to restrict caloric intake) is often conceptualized as maladaptive with respect to eating disorders, in the context of obesity, moderate restraint may facilitate weight loss and improve physical health. It is therefore important to elucidate affective predictors of binge eating and restraint among individuals with obesity, which may inform treatment approaches that concurrently target binge eating and maximize health promoting behaviors. This study examined relationships between trait and state levels of NA and positive affect (PA), binge eating, and restraint among 50 adults with obesity (BMI ≥ 30). Participants completed baseline assessments and a two-week ecological momentary assessment (EMA) protocol. Structural equation modeling assessed a trait model of affect in relationship to overall levels of binge eating and restraint, while general estimating equations (GEEs) assessed state models examining relationships between momentary affect and subsequent binge eating and restraint. The trait model indicated higher overall NA was related to more binge eating episodes, Estimate=.49, SE=.18, 95% BC CI [.21, .86] but was unrelated to overall restraint, Estimate=-.001, SE=.02, 95% BC CI [-.03, .03]. Higher overall PA was related to higher overall restraint, Estimate=.04, SE=.02, 95% BC CI [.01, .07] but was unrelated to binge eating. State models indicated momentary NA was associated with a greater likelihood of subsequent binge eating, Estimate=.05, SE=.02, $p=.01$, and lower restraint, Estimate=-.01, SE=.003, $p=.02$. Momentary PA was unrelated to subsequent binge eating or restraint. Taken together these findings demonstrate important distinctions between the valence (i.e., positive versus negative) and stability (i.e., state versus trait) of affect in relationship to binge eating and restraint among individuals with obesity. While NA is a more salient predictor of binge eating than PA, both overall PA and momentary NA appear to be relevant predictors of restraint.

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Symposium 56B

DO IMPULSIVITY AND LOSS-OF-CONTROL EATING MODERATE THE RELATIONSHIP BETWEEN INTERNAL STATES AND DIETARY LAPSES? AN EMA STUDY

Dr. Stephanie Manasse, PhD

Empirical tests of the prediction that changes in internal states would lead to dietary lapses (unintended breaks of eating restraint) have yielded mixed results, potentially because this relation would only be evident for those high in impulsivity or with loss-of-control (LOC) eating. The current study examined impulsivity (inhibitory control, the ability to withhold an automatic response, and negative urgency, the tendency to act rashly while in distress) and LOC eating as moderators of the relation between affective and physical states and the likelihood of dietary lapses in overweight and obese adults ($N=190$) completing 2 weeks of ecological momentary assessment at the beginning of an obesity intervention. Generalized estimating equations indicated that for those without LOC, overall greater levels of irritation, loneliness, and boredom were associated with higher lapse likelihood, while for those with LOC eating, likelihood of lapse was elevated regardless of overall levels of negative affect ($bs = -.74$ – $-.45$, $ps < .001$). The relation between momentary increases in stress and lapse was more pronounced for those with poorer inhibitory control ($b = .001$, $p = .01$), and the relation between increases in loneliness and subsequent lapse likelihood was strongest for those higher in negative urgency ($b = .32$, $p = .03$). Interestingly, the relation between increases in hunger and subsequent lapse was strongest for those lower in negative urgency ($b = -.23$, $p < .01$). Results suggest that those with LOC appear to be at greater risk for dietary lapses even if overall levels of negative affect are low. Impulsivity may strengthen the relationship between affective states and subsequent lapses, while increases in physical states may be predictive of lapses for those lower in impulsivity. With replication, results could point towards tailoring the provision of weight control strategies based on LOC status and impulsivity level.

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Symposium 56C

STRESS AND BINGE EATING: INTEGRATING ECOLOGICAL MOMENTARY ASSESSMENT WITH PSYCHOPHYSIOLOGY

Kathryn Godfrey, PhD

Advances in mobile technology have created the potential to improve the reach and capacities of weight management interventions. Smartphone applications (apps) for dietary logging are growing in popularity as they allow real-time tracking of eating behaviors in a naturalistic setting with devices already in users' hands. Given the enthusiasm for these technologies and their possible clinical utility, more research is needed in populations with disordered eating. This study examined the relationship between self-reported stress and binge eating using smartphone-based ecological momentary assessment (EMA) and explored the feasibility of incorporating psychophysiological measures of stress. Sixteen male and female community-recruited participants with obesity who binge eat completed a seven day at-home EMA protocol to capture stress and eating behaviors. Participants also took photos of their food, and a chest-worn device measured their heart rate variability (HRV) before eating. Results of longitudinal multilevel mixed effects models show that higher self-reported stress was linked to increased probability of overeating and loss of control overeating ($p = 0.011$ to $p < 0.001$) but not of eating non-nutritious, high calorie foods, or breaking dietary rules. Inspection of HRV data demonstrated substantial limitations of ambulatory HRV data quality. Participants generally reported ease and satisfaction with taking photos of their food. Validation of these photos reveal that participants, even after in person training, were somewhat inaccurate at rating their eating behavior. Taking photos of food may be feasible but more training is needed to improve ratings of disordered eating behaviors. Findings further establish stress as a trigger for overeating and loss of control overeating. Research incorporating psychophysiological measures of stress with EMA may require improved devices to capture HRV through a chest-worn monitor. This work informs future EMA research on stress and eating and builds foundations to develop just-in-time adaptive interventions and smartphone apps enhancing and delivering evidence-based interventions for binge eating and weight management.

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Symposium 57

2:00 PM-3:15 PM

COMMUNAL COPING 20 YEARS LATER: ADVANCES IN THEORY, MEASUREMENT, AND APPLICATION

Vicki Helgeson, Ph.D.¹, Kelly Rentscher, Ph.D.², Bonita Sur, M.S.³, Tracey A. Revenson, Ph.D.⁴

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Over the past two decades, a variety of approaches have been taken to the study of how couples cope with chronic disease. The focus of this symposium is on one interpersonal approach referred to as communal coping. Twenty years ago, communal coping was defined by Lyons, Mickelson, Sullivan, and Coyne (1998) as occurring when “one or more individuals perceive a stressor as ‘our’ problem (a social appraisal) vs. ‘my’ or ‘your’ problem (an individualistic appraisal), and activate a process of shared or collaborative coping” (p. 583). The goal of this symposium is to review the current theory, measurement possibilities, and applications of communal coping to individuals who face chronic disease. The first presenter, Vicki Helgeson, will focus on the two components of communal coping—illness appraisal and collaboration. She will identify antecedents of the two components of communal coping, examine the relation of illness appraisal to collaboration, and explore the implications of illness appraisal and collaboration for the interpersonal exchanges between couple members in which one person has type 1 diabetes. The second presenter, Kelly Rentscher, will examine novel measurement approaches to communal coping. In expanding beyond self-report, she will present data on a new observational measure of communal coping as well as data on we-talk in the context of couples coping with alcohol use disorders and heart or lung disease. Finally, the third presenter, Bonita Sur, will examine the application of communal coping to the prevention of type 2 diabetes. Specifically, she will describe the FAMCON intervention and the interpersonal mechanisms that are targeted to inspire behavior change in the areas of diet and physical activity. Our discussant, Tracey Revenson, is a renowned leader in the field of health psychology with specific expertise in interpersonal coping. She will offer her insights into the progress that has been made over the past 20 years on dyadic coping in light of these presentations and suggest directions for future research.

Symposium 57A

COMMUNAL COPING: AN EXAMINATION OF SHARED ILLNESS APPRAISAL AND COLLABORATION IN THE CONTEXT OF ADULTS WITH TYPE 1 DIABETES

Vicki Helgeson, Ph.D.

Communal coping is a dyadic approach to coping with chronic disease that was defined by Lyons et al. (1998) as consisting of shared illness appraisal (our problem vs. my problem) and collaborating (i.e., working together) to manage the illness. In a study of 199 couples in which one person was diagnosed with type 1 diabetes (52% female, 91% white, average 47 [range 26–75]), we explored both shared appraisal and collaboration and their implications for patient-partner interactions. We asked patients and partners separately whether they viewed diabetes as (1) the patient's issue, (2) the patient's issue with effects on partner, or (3) a shared issue. Partners were significantly more likely than patients to view the illness as a shared issue (69% vs. 24%; $p < .05$). Those for whom independence was central to their self-concepts were less likely to view the illness as shared. Patients who were older, had been married longer, and reported lower physical functioning were more likely to view the illness as shared (all p 's $< .05$). However, the relation to physical functioning disappeared when age was statistically controlled. Importantly, shared illness appraisal was related to collaboration ($p < .001$). Shared illness appraisal was also related to more emotional and instrumental support receipt from partners, higher relationship quality, and lower levels of diabetes distress (all p 's $< .01$). These findings held when age was statistically controlled. Shared illness appraisal was not related to diabetes self-efficacy or self-care behavior, but did interact with whether the patient was diagnosed with diabetes before (76%) or after the partner relationship was established (24%). Patients who reported the highest self-efficacy ($p < .10$) and the best self-care behavior ($p < .05$) were those who were diagnosed with diabetes after the relationship was established and perceived the illness as shared. Collaboration was related to reports of emotional and instrumental support from partners and couple interaction behavior during a videotaped diabetes discussion (all p 's $< .05$). When discussing diabetes difficulties, collaboration was related to observations of joint coping, patients' being receptive to partner support, and partners providing more support and being engaged in the discussion. In sum, patients who appraise diabetes as a shared issue and collaborate with partners to manage the illness are more likely to have supportive exchanges that could benefit diabetes care.

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Symposium 57B

MEASUREMENT CONSIDERATIONS FOR THE ASSESSMENT OF COMMUNAL COPING IN A THERAPY CONTEXT

Kelly Rentscher, PhD

Communal coping—a relational process in which partners view a problem interdependently as *ours* rather than *yours* or *mine* and take collaborative action to address it (Lyons et al., 1998)—has emerged as an important correlate of relationship quality and predictor of partner health. Despite recent advances in communal coping theory and research, it has proven challenging to develop well-validated measures. Given social desirability concerns inherent in self-report scales and the evaluative nature of the communal coping construct, observational and behavioral measures have strong potential from a measurement perspective. Several studies link partners' first-person plural pronoun use (*we-talk*), as a behavioral (i.e., linguistic) measure of communal coping, to favorable health outcomes. We present findings from a pilot study that aimed to develop an observational measure of communal coping in a therapy context and further validate *we-talk* as a behavioral measure. 56 couples in which one partner abused alcohol or continued to smoke cigarettes despite having heart or lung disease participated in a couple-focused intervention for health problems. We developed a 4-item rating scale based on Lyons et al.'s conceptualization and previous self-report measures of communal coping. Trained raters observed a therapy session in which increases in communal coping were expected to occur and rated communal coping behaviors for each partner in 1-minute intervals. We obtained pronoun measures via computerized text analysis from transcripts of partner speech during the session. Psychometrically, results provided evidence of construct validity as partners showed significant within-session increases in communal coping behavior ($t_{patients} = -7.74$; $t_{spouses} = -6.78$, $ps < .01$). Results also provided evidence of internal validity, with excellent consistency of scale items (Chronbach α : .93–.97) and inter-rater reliability (ICCs: .54–.82) across segments. With respect to external validity, communal coping behavior correlated with *we-talk* ($r_{patients} = .52$ and $.45$; $r_{spouses} = .43$ and $.49$, $ps < .01$) and a global measure of constructive communication during most segments ($r_{patients} = .17$, $p = .23$ and $r = .51$, $p < .01$; $r_{spouses} = .31$ and $.53$, $ps < .05$). Findings provide preliminary evidence for an observational measure of communal coping in a therapy context and further validate *we-talk* as a behavioral measure. We also discuss considerations for capturing communal coping in therapeutic as well as laboratory and real world settings.

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Symposium 57C

COMMUNAL COPING AS A MECHANISM FOR HEALTH BEHAVIOR CHANGE IN THE FAMILY CONSULTATION (FAMCON) PROGRAM FOR T2 DIABETES PREVENTION

Bonita Sur, M.S.

A large and growing literature points to the importance of marriage and marriage-like relationships in promoting health behaviors and for predicting health outcomes. As estimates of pre-diabetes prevalence and disease burden associated with type 2 diabetes escalate, novel prevention programs that have the potential to be widely disseminated and implemented would be of immense public health benefit. The FAMily-based CONSultation (FAMCON) intervention program is an evidence-based treatment for modifying a range of health behaviors (e.g., alcohol abuse, smoking) by leveraging relationship dynamics. We have recently adapted the FAMCON program to target the prevention of diabetes using close relationships as a vehicle for increasing physical activity and maintaining a healthy diet. FAMCON does not target relationship discord per se, but rather uses a systemic perspective to identify and modify couple-level interaction patterns (e.g. communal coping). In this talk, we describe three couple-level behavioral targets that serve as the putative mechanisms of the FAMCON intervention, and discuss how we assess and target each mechanism in the applied intervention. These targets include (a) symptom-system fit, the intimacy-promoting relationship dynamics that reinforce physical inactivity or unhealthy eating; (b) ironic processes, where one person's efforts to encourage physical activity or healthy eating reinforce physical inactivity or unhealthy eating in the partner; and, (c) communal coping, the degree to which couple views the health behavior problem as shared communally within the relationship. We will present results from an initial feasibility and acceptability trial and preliminary pilot outcome data from three couples.

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Symposium 58

2:00 PM-3:15 PM

TRANSLATIONAL RESEARCH ON THE ROLE OF FORECASTED HIV STIGMA IN THE CONTEXT OF HIV PREVENTION

H. Jonathon Rendina, PhD, MPH¹, Kristi E. Gamarel, PhD², Sarit A. Golub, PhD, MPH³, John Pachankis, PhD⁴¹Hunter College of the City University of New York (CUNY), New York, NY; ²University of Michigan, Ann Arbor, MI; ³Hunter College/Graduate Center, City University of New York, New York, NY; ⁴Yale University, New Haven, CT

Researchers, clinicians, and policy makers have increasingly recognized the role of HIV stigma on the health and well-being of people affected by HIV and how HIV stigma undermines engagement and retention in HIV treatment and care. To date, however, there has been limited research on the impact of forecasted HIV stigma; that is, the discrimination, rejection, or negative self-image that HIV-negative individuals expect to experience in the event of seroconversion. Data indicate that forecasted HIV stigma is prevalent (i.e., HIV-negative people anticipate they would experience high levels of HIV stigma upon seroconversion) and negatively impacts prevention behavior (e.g., testing behavior). This symposium brings together cutting-edge empirical research to foster greater understanding of forecasted HIV stigma, describe its associations with HIV prevention behaviors among at-risk communities, and discuss the ways that this research could be translated to impact the uptake of biomedical HIV prevention strategies, such as HIV testing and pre-exposure prophylaxis (PrEP). The first talk will present a study of 373 gay and bisexual men that found that, in line with the *impact bias* from the affective forecasting literature, HIV-negative men forecasted significantly higher levels of HIV stigma than HIV-positive men actually experienced, yet experienced HIV stigma was more strongly linked to mental health outcomes for HIV-positive men than forecasted stigma was for HIV-negative men. The second talk presents a study exploring ways in which forecasted HIV stigma is associated with delaying HIV testing among a sample of 753 young men and transgender women who have sex with men ages 15–24. The third talk presents data from a PrEP demonstration-implementation project illustrating how forecasted HIV stigma negatively predicts PrEP uptake among HIV-negative gay and bisexual men, with the association mediated by PrEP stigma beliefs and PrEP adherence self-efficacy. Taken together, these talks draw on affective forecasting and existing HIV stigma frameworks to advance research on how forecasted HIV stigma may undermine HIV prevention behaviors among the highest priority populations. The discussion will be led by a researcher and clinician with extensive expertise in stigma-ameliorating interventions, and will focus on future directions for research, practice, and policy related to reducing HIV stigma to successfully engage people in HIV prevention.

Symposium 58A

FORECASTED VERSUS EXPERIENCED STIGMA AND THE IMPACT BIAS: COMPARING THE IMPACT OF HIV STIGMA BY HIV STATUS

Dr. H. Jonathon Rendina, PhD, MPH

Background: Building upon work on affective forecasting, researchers have examined the extent to which HIV-negative individuals may anticipate or *forecast* the ways HIV stigma might feel were they to seroconvert. The purpose of the present analyses was twofold. First, we sought to examine evidence for the *impact bias* in stigma forecasting, whereby HIV-negative individuals would report greater *expected* levels of stigma upon diagnosis than HIV-positive men report actually experiencing post-diagnosis. Second, we sought to support the hypothesis that forecasted stigma can take a negative toll on mental health and examine differential effects of stigma on mental health by HIV status.

Method: We examined data from 373 gay and bisexual men (GBM) who completed an online survey on stigma and mental health and whose self-reported HIV status was confirmed via testing. We used 13 items from the original Berger HIV Stigma Scale intended to capture internalized stigma and adapted them for HIV-negative participants; anxiety and depression were measured using the Brief Symptom Inventory.

Results: The sample was nearly half HIV-negative ($n = 206$, 55.2%) and nearly half HIV-positive ($n = 167$, 44.8%). HIV-negative GBM forecasted significantly greater levels of HIV stigma ($M = 34.3$, $SD = 8.0$) than HIV-positive GBM experienced ($M = 27.7$, $SD = 8.3$). HIV stigma had a significant impact on increased anxious ($\beta = 0.16$, $p = 0.04$) and depressed ($\beta = 0.21$, $p = 0.004$) symptomology. Moreover, stigma's impact on anxious symptoms was moderated by HIV status such that experienced stigma was more strongly associated with HIV-positive GBM's anxious symptoms than was forecasted stigma for HIV-negative GBM ($\beta = 0.37$, $p = 0.04$), though the moderation was only marginally significant for depressive symptoms ($\beta = 0.33$, $p < 0.07$).

Conclusions: The present study supported the notion that forecasted HIV stigma can be considered in a way that is consistent with affective forecasting and provided evidence of the impact bias. HIV stigma exerts a negative impact on the mental health of both HIV-negative (i.e., forecasted stigma) and HIV-positive (i.e., experienced stigma) GBM, though the effect is stronger for positive men. Future studies examining within-person changes using pre-post data on HIV diagnosis are warranted to further examine stigma forecasting and its association with subsequent experiences of stigma among HIV-positive individuals.

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Symposium 58B

FORECASTED HIV STIGMA AND DELAYS IN HIV TESTING BEHAVIORS AMONG YOUNG MEN WHO HAVE SEX WITH MEN AND TRANSGENDER WOMEN

Dr. Kristi E. Gamarel, PhD

Background: Young gay, bisexual, and other men who have sex with men and transgender women are disproportionately affected by HIV/AIDS. The success of biomedical prevention strategies is predicated on regular HIV testing; however, there has been limited uptake of testing among these groups. Forecasted or anticipated HIV stigma—expecting rejection as a result of seroconversion—may serve as a significant barrier to testing.

Methods: A cross-sectional sample of young men and transgender women (N=753, ages 15 to 24) were recruited to participate in a one-time survey through the Adolescent Medicine Trials Network for HIV/AIDS Interventions. In total, 4.4% identified as transgender women and 90% youth identified as a person of color (59.9% Black, 26.4% Latina, and 13.7% other race/ethnicity) and 36.8% reported a lifetime history of unstable housing. Bivariate and multivariate GEE models were fit to examine associations between forecasted HIV stigma and delays in regular testing (i.e., within the past 6 months based on CDC recommendations). Adjusted odds ratios (AOR) and 95% Confidence Intervals (95%CI) were estimated.

Results: Approximately one-third of youth had not tested within the last 6 months. In a multivariable model, greater levels of forecasted HIV stigma (AOR = 1.04, 95% CI: 1.02, 1.07) was associated with an increased odds of delaying regular HIV testing; whereas, reporting a gay sexual identity compared to a bisexual or other sexual identity (AOR = 0.69, 95% CI: 0.49, 0.97) was associated a decreased odds of delaying regular HIV testing over and above sociodemographic characteristics, substance use, and sexual risk behaviors.

Conclusions: Findings highlight the importance of considering the ways in which stigmatizing contexts impact young men who have sex with men and transgender women's testing behaviors, and consequently their uptake and use of appropriate prevention strategies. Future research and interventions approaches will be discussed on how to address HIV stigma in order to increase regular HIV testing among at-risk youth.

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Symposium 58C

FORECASTED HIV STIGMA NEGATIVELY IMPACTS PREP UPTAKE: FINDING FROM A COMMUNITY-BASED PREP DEMONSTRATION PROJECT

Dr. Sarit A. Golub, PhD, MPH

Background: Previous research has demonstrated that forecasted or anticipated HIV stigma, i.e., HIV stigma that HIV-negative individuals expect they would experience were they to become HIV-positive, is negatively associated with prevention behavior. However, the mechanisms behind this ironic relationship are not well understood. This analysis tested the hypothesis that forecasted HIV stigma would be associated with increased PrEP stigma beliefs and decreased PrEP-related self-efficacy (mediating variables), thereby reducing PrEP uptake.

Method: Data were collected as part of SPARK, an NIH-funded PrEP demonstration project conducted in collaboration with a community-based health center in New York City. Health center participants who were eligible for PrEP (n = 431; age 18–76; 49% PoC) completed an online survey and were offered PrEP at their next clinic visit. This analysis compared the 300 participants who accepted PrEP to the 131 who declined it.

Results: Individuals who declined PrEP reported significantly higher forecasted HIV stigma, compared to those who accepted PrEP ($p < .01$). Forecasted HIV stigma was positively associated with PrEP stigma beliefs ($r = .30$, $p < .001$) and negatively associated with PrEP adherence self-efficacy ($r = -.13$, $p < .01$). Using the PROCESS macro in SPSS, we tested a mediation model in which the negative association between forecasted HIV stigma and PrEP uptake was mediated through these two variables. Bootstrapping revealed significant indirect effects of both PrEP stigma beliefs ($b = -.16$, 95% CI -0.36, -0.02) and adherence self-efficacy ($b = -.28$, 95% CI -0.52, -0.06) and indicated that both variables contributed significantly to the model.

Discussion: These data add to the literature on the negative impact of forecasted HIV stigma on prevention behavior, indicating that forecasted HIV stigma may be a barrier to PrEP uptake. These data also support the hypothesis that forecasted HIV stigma impacts prevention behavior by fostering negative attitudes toward HIV prevention (e.g., PrEP stigma beliefs) and one's perceived ability to successfully engage in it. Providers, advocates, and policy makers must recognize HIV stigma as a barrier to prevention efforts, and address stigma as a critical component of comprehensive prevention strategies.

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Symposium 59

2:00 PM-3:15 PM

FREQUENCY AND IMPACT OF ALCOHOL, OPIOID, AND MARIJUANA CO-USE IN OPIOID-PRESCRIBED INDIVIDUALS

Kevin Vowles, PhD¹, Katie Witkiewitz, PhD¹, Mark a. Ilgen, PhD²¹University of New Mexico, Albuquerque, NM; ²University of Michigan, Ann Arbor, MI

In the past 20 years, there have been significant increases in opioid prescriptions for chronic pain. There are now well-established relations between the proliferation of available opioids and contemporaneous increases in opioid-related morbidity and mortality. As the available data has highlighted these opioid-related issues, it has become clear that opioids are often co-used with other substances, frequently including those that are legally obtainable such as alcohol and medical marijuana. The scope and impact of this co-use, however, remains unclear. The present symposium will therefore present data on substance co-use in those who use opioids for pain treatment. The first presenter, Dr. Katie Witkiewitz will review findings from a large national dataset, the 2015 National Survey on Drug Use and Health ($N = 57,146$) indicating significant patterns of co-use and significant associations between heavy drinking, marijuana use, and misusing pain relievers to manage pain. Next, Dr Mark Ilgen will describe the longitudinal associations between frequency and quantity of marijuana use and opioid misuse as well as pain and functioning in adults who use medical marijuana for the treatment of pain ($N=801$). Finally, Dr Kevin Vowles will present data on the frequency of opioid and alcohol misuse in a sample of opioid-prescribed individuals with chronic pain, as well as the impact of misuse of one or both of the substances on physical and psychosocial functioning. Overall, the presentations will highlight new findings in the area of substance co-use in those prescribed opioids for the treatment of chronic pain, as well as co-use in population data. They will highlight an intensely practical issue as well – historically, pain treatment providers have rarely been trained in treatments for problematic substance use and addiction treatment providers have rarely been trained in principles of pain management and rehabilitation. These data suggest that such cross training is necessary and that future work examining integrated treatments that seek to both identify and treat problematic substance use within those who have chronic pain is urgently needed. Each presentation will highlight areas of need and opportunity within this domain.

Symposium 59A

ALCOHOL AND OPIOID USE IN CHRONIC PAIN: A CROSS-SECTIONAL EXAMINATION OF DIFFERENCES IN FUNCTIONING BASED ON MISUSE STATUS

Dr. Kevin Vowles, PhD

A number of studies have indicated that opioid misuse is associated with disrupted functioning in those with chronic pain. Less work has examined whether misuse of alcohol has similar problematic influences. The present study examined frequency of opioid and alcohol misuse in a sample of 131 individuals (61.1% female) prescribed opioids for the treatment of chronic pain. Participants completed an anonymous survey on-line, consisting of standardized measures of pain, physical and emotional functioning, and risk of opioid and alcohol misuse. Published cut-scores were used to categorize individuals according to misuse status for opioids and alcohol. In total, 35.9% ($n=47$) were below the risk threshold for both substances, 22.9% ($n=30$) were above the risk threshold for both substances, 38.2% ($n=50$) were above the risk threshold for opioids alone, and only 3.0% ($n=4$) were above the risk threshold for alcohol alone. A multivariate analysis of variance was next performed to examine differences in pain and pain-related functioning between groups (after excluding individuals in the alcohol misuse group due to the small sample size). Measures of functioning included usual pain intensity, pain-related distress, depression, physical and psychosocial disability, pain acceptance, engagement in valued activity, and adaptive pain behaviors. Group comparisons indicated that individuals who did not report misuse for either substances reported less distress and greater healthy functioning in comparison to those who reported opioid misuse alone or misuse for both substances. No differences in distress or functioning were indicated for the latter two groups, suggesting that alcohol plus opioid misuse was not associated with more disrupted functioning in comparison to opioid misuse alone. Overall, the frequency of opioid misuse in this sample was somewhat higher in comparison to previous work, although the findings that such misuse can be associated with problems is consistent. Misuse of both alcohol and opioids was observed in approximately 1 out of 5 participants, suggesting co-morbid misuse may be rather common and also disruptive. While these data are preliminary, and further work is necessary, they do suggest that issues of substance misuse in those with chronic pain extends beyond opioids alone. Further, treatment efforts may benefit from combining rehabilitative interventions with those addressing problematic substance use.

Symposium 59B

ALCOHOL, MARIJUANA, AND OPIOID CO-USE IN THE 2015 NATIONAL SURVEY ON DRUG USE AND HEALTH: IMPLICATIONS FOR THE OPIOID EPIDEMIC

Dr. Katie Witkiewitz, PhD

Rising rates of opioid misuse, opioid use disorder (OUD), and opioid overdose deaths in the United States have been described as an “opioid epidemic.” These trends have largely been attributed to dramatic increases in opioid prescription rates and long-term prescription opioid treatment for chronic pain. Alcohol misuse and alcohol use disorder (AUD) are also prevalent public health problems associated with considerable individual and societal costs. Marijuana use is also increasing in the United States, and changing marijuana policies (e.g., legalized recreational marijuana) are likely to be associated with further increases in use. Alcohol, marijuana, and opioids are commonly used in combination, and this pattern of polysubstance use is associated with poor clinical prognosis. For example, alcohol is a contributing factor in many opioid overdose deaths and the continued use of alcohol and marijuana may interfere with OUD treatment, particularly medication-assisted treatment. Further, the concurrent use of alcohol, marijuana, and opioids may interfere with treatment for chronic pain, which impacts at least 1 in 10 adults in the United States. Yet, research on the association between alcohol, marijuana, and opioid co-use is lacking. The current presentation will examine the association between alcohol, marijuana, and opioid co-use in a general population sample using data from the 2015 United States National Survey on Drug Use and Health (NSDUH; $N = 57,146$). The NSDUH is an annual nationwide survey using in-person interviews conducted with randomly selected individuals aged 12 and older. The current presentation focuses on adults, ages 18 and older ($n= 43,561$). In the 2015 survey, 73.2% reported past year use of alcohol, 33.4% reported past year use of any prescription opioid, and 19.0% reported past year use of marijuana. With respect to problematic levels of use, 7.9% met criteria for current alcohol abuse or dependence, 4.7% reported misuse of a prescription opioid in the past year (1% met criteria for current pain reliever abuse or dependence), and 2.3% met criteria for current marijuana abuse or dependence. Regression analyses, adjusting for sampling weights, indicated significant co-use of all three substances ($p < 0.001$), significant associations between misuse of all three substances ($p < 0.001$), and significant associations between heavy drinking, marijuana use, and using pain relievers to manage pain ($p < 0.001$). Results will be discussed within the context of the opioid epidemic and the treatment of chronic pain.

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Symposium 59C

ASSOCIATIONS BETWEEN MEDICAL CANNABIS USE, PAIN, FUNCTIONING AND OPIOID MISUSE AMONG ADULT MEDICAL CANNABIS PATIENTS

Mark a. Ilgen, PhD

Background: Pain is the most commonly endorsed reason for medical cannabis use. Several recent state-level epidemiological studies have found a link between the passage of medical cannabis legislation and reductions in opioid-related adverse outcomes. However, very little is known on an individual level about the real-world use of cannabis for pain and how this relates to pain-related outcomes (pain level and pain interference) and opioid misuse.

Methods: A cohort of adults seeking either initial or renewal of certification for medical cannabis for pain management from one of four clinics in the state of Michigan (N = 801) were recruited into this cohort study. These participants were administered measures of the quantity and frequency of cannabis use, pain severity, pain interference and opioid misuse every six months for two years. Follow-up rates exceeded 80% for each of the four follow-up assessments. The present analyses focus on the first year of data collection and examine prospective relationships between frequency of cannabis use and subsequent measures of pain and opioid misuse.

Results: The frequency of daily or almost daily cannabis use among medical cannabis patients increased from 74% to 82% over one year; the frequency of opioid misuse decreased from 31% to 21%. There was no association between frequency of cannabis use at 6-months and the likelihood of opioid misuse at 1-year. Frequency of cannabis use at 6-months was not associated with 1-year pain severity and was associated with greater 1-year pain interference.

Conclusions: Adults who use medical cannabis for pain report very frequent use of cannabis and approximately one third report misuse of opioids. Despite recent findings suggesting state-level associations between medical cannabis laws and fewer opioid-related harms, the present study found no link between the extent of cannabis use and likelihood of opioid misuse on an individual level. No evidence was seen for prospective associations between the extent of cannabis use and pain severity, with some suggestion that greater cannabis use was associated with greater subsequent pain interference. The design of this observational study prevents the determination of causal links between these variables. However, these analyses did not reveal clear benefits of medical cannabis use and underscore the importance of examining the impact of medical cannabis use on positive and negative outcomes at the individual patient level.

Symposium 60

2:00 PM-3:15 PM

UNDERSTANDING AND HARNESSING SOCIAL INFLUENCES ON WOMEN'S HEALTH BEHAVIORS: SOCIAL PERCEPTIONS, STIGMA, AND SOCIAL MODELING

Danielle Arigo, Ph.D. in Clinical Psychology¹, Emily Panza, M.S.², Deirdre Dlugonski, PhD³, Tricia Leahey, PhD⁴

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Women experience unique challenges to engaging in behaviors such as healthy eating and physical activity, and have specific needs with respect to improving these behaviors that may begin early in life. Of particular importance for women's health behaviors are impressions of and experiences with their social environments, which can influence women's behaviors through a variety of social processes. At present, however, the majority of research focuses on the individual in isolation and does not take into account social processes or perceptions. Additional attention to this set of influences on women's health behaviors may improve intervention efforts tailored for women. Toward these ends, the goal of this symposium is to describe several types of social influence on women's health behaviors: perceptions of the quality of social interactions, self-evaluations relative to others (i.e., social comparison), stress associated with being a member of a minority group (i.e., minority stress as a form of stigma), and shared health behaviors between mothers and daughters. Speakers in this session will present empirical evidence from ambulatory assessment and intervention studies that investigate these processes and their associations with women's health behaviors. First, Dr. Danielle Arigo will describe daily social perceptions (of interaction quality and social comparison), and relations between perceptions and objectively assessed physical activity, from a daily diary study among college women. Emily Panza will then present findings on relations between minority stress experiences and overeating behavior from an ecological momentary assessment study among overweight sexual minority women. Finally, Dr. Deirdre Dlugonski will share the results of a pilot study testing a physical activity intervention designed to promote shared physical activity between mothers and daughters. Each speaker will emphasize the theoretical underpinnings of relations between social processes and women's health behaviors. The discussant, Dr. Tricia Leahey, will integrate the speakers' findings and discuss their implications for understanding and improving health promotion efforts for women.

Symposium 60A

RELATIONS BETWEEN DAILY SOCIAL PERCEPTIONS AND OBJECTIVELY ASSESSED PHYSICAL ACTIVITY AMONG COLLEGE WOMEN

Dr. Danielle Arigo, Ph.D. in Clinical Psychology

Background: Women engage in less physical activity (PA) than men across the lifespan, and there is need for an improved understanding of barriers and facilitators of PA among college women in order to entrench PA habits early in life. College women's perceptions of their social environments, including the quality of their social interactions and the occurrence of social comparisons (i.e., self-appraisals relative to others), are known to influence physical activity. To date, however, the nature of these relations and their potential utility for informing PA interventions are unclear. The present daily diary study was designed to (1) characterize college women's perceptions of their social interactions and comparisons in daily life, and (2) examine time-sensitive, within-person relations between daily social perceptions and PA outcomes.

Method: Participants were women in their second through fourth years of college who did not have regular exercise routines ($n=62$, $M_{Age}=21$, $M_{BMI}=23.1$ kg/m²). For 7 days, participants responded to a nightly electronic survey; they categorized the number and quality (positivity/negativity) of that day's social interactions and social comparisons made each day. Participants also wore Fitbit wristbands to capture their steps and engagement of moderate-to-vigorous physical activity (MVPA) and reported on their motivation and intentions for PA in each survey. Multilevel mixed models were used to differentiate stable, between-person trends from day-to-day (within-person) changes.

Results: More than 75% of the variability in number and ratings of social interaction quality was attributable to within-person change between days (ICC = 0.19–0.25). Social comparisons were reported on 50% of assessment days and were predominantly based on appearance (71% of days with comparisons). Participants were twice as likely to report making comparisons on days with increased negative interactions (95% CI 0.82, 5.55); participants also engaged in 1145 fewer steps and 10 fewer minutes of MVPA on days with +1SD ratings for negative interactions. Conversely, they engaged in 780 additional steps and 10 additional minutes of MVPA on days with +1SD ratings for positive interactions. Steps and MVPA did not differ between days when participants reported (vs. denied) that comparisons occurred. However, on days with reports of comparison occurrences, participants showed a 40% decrease in motivation for PA and a 50% increase in the likelihood of endorsing an intention to exercise the following day.

Conclusions: Findings suggest that daily social perceptions are associated with meaningful changes in PA outcomes. Additional work is necessary to determine the mechanism(s) of these relations, as well methods for harnessing the benefits (or buffering against the negative influences) of social perceptions in PA programs for college women.

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Symposium 60B

MINORITY STRESS AND EATING BEHAVIOR AMONG OVERWEIGHT AND OBESE SEXUAL MINORITY WOMEN: AN ECOLOGICAL MOMENTARY ASSESSMENT STUDY

Emily Panza, M.S.

Sexual minority women are nearly three times more likely to be overweight or obese than their heterosexual counterparts, yet little research has investigated *why* or *how* sexual minority status confers risk for obesity in women (Boehmer, Bowen, & Bauer, 2007). The current study examined the relevance of one factor, minority stress, as a mechanism for this weight disparity. Sexual minority women belong to multiple socially stigmatized groups: being non-heterosexual, being female, and for 60%, being overweight. This *triple oppression* exposes sexual minority women to unique and chronic minority stressors, including repeated experiences of external stigmatization (Meyer, 2003). Social rejection is stressful, causing chronic elevations in stress and negative emotion that some sexual minority women may try to regulate by overeating and/or binge eating. Over time, these behaviors may promote weight gain and risk for obesity.

To test this proposed model, the current study used Ecological Momentary Assessment (EMA) to examine whether lifetime and acute minority stress increased risk for overeating and binge eating in sexual minority women. 55 overweight or obese (BMI>25) sexual minority (e.g., lesbian, bisexual) women were recruited from the community to complete baseline assessments of eating behavior and minority stress due to sexual orientation, weight, and gender. For the following five days, participants used a smartphone application to report experiences of stigmatization, overeating and binge eating five times daily.

Findings revealed promising support for the proposed model. As expected, women who reported greater lifetime heterosexist, gender, and weight-based stigma reported higher baseline levels of disordered eating and binge eating. Stigma events during the EMA period were associated with greater concurrent overeating at the same time point, and being stigmatized on any given day was associated with more overeating and binge eating on that day.

The current study provides preliminary support for minority stress as a mechanism of the obesity disparity among sexual minority women. Given the paucity of research in this area and this study's preliminary nature, findings justify future research to unpack the relevance and significance of minority stress as a risk factor for obesity in this group. This will be essential for developing effective, informed, and tailored interventions to reduce obesity and to improve health among sexual minority women.

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Symposium 60C

MOTHERS AND DAUGHTERS MOVING TOGETHER: A PILOT INTERVENTION TO PROMOTE SHARED PHYSICAL ACTIVITY

Deirdre Dlugonski, PhD

Many young children are not engaging in enough physical activity to accumulate health benefits. Parents are primary role models for young children and should be involved in interventions to increase physical activity among young children. Previous evidence suggests that children are more likely to be physically active when a parent engages in physical activity with the child.

Purpose: The goal of the Mothers and Daughters Moving Together (MDMT) intervention was to increase shared physical activity participation among mothers and their 2–5-year-old daughters.

Methods: In this quasi-experimental design, mother-daughter dyads self-selected into either the intervention ($N=21$ dyads) or control ($N=10$ dyads) group based on their availability for intervention sessions. Mothers and daughters in the intervention participated in 12-weekly physical activity sessions and received a manual and equipment to facilitate increased shared physical activity. The control group participated in pre- and post-intervention testing sessions and then received the manual and equipment upon study completion. At pre- and post-intervention mothers and daughters wore accelerometers for 1-week and mothers completed demographic, family physical activity, and shared physical activity questionnaires. A series of 2 (Group: Intervention versus Control) x 2 (Time: Pre- versus Post-Intervention) ANOVAs were conducted to determine the impact of the intervention on physical activity, mother-daughter shared physical activity, and family physical activity.

Results: There were no statistically significant main ($F(1, 23)=.53, p=.47$) or interaction ($F(1, 23)=.85, p=.37$) effects for accelerometer-measured moderate-to-vigorous physical activity (MVPA) for mothers. Similarly, there were no statistically significant main ($F(1, 23)=.02, p=.89$) or interaction ($F(1, 23)=1.28, p=.27$) effects for daughter MVPA. There was a statistically significant group by time interaction for mother-daughter shared physical activity ($F(1, 25)=8.46, p=.008$). Intervention group mothers reported a large increase ($d=.90$) in frequency of shared physical activity with their daughters and control mothers reported a small decrease ($d=-.20$). There was a statistically significant group by time interaction for shared family physical activity ($F(1, 25)=4.87, p=.04$), with mothers in the intervention reporting a large increase in family physical activity ($d=.84$) and control mothers reporting no change ($d=.03$).

Conclusions: The MDMT intervention successfully increased shared physical activity between mothers and daughters but did not result in increased physical activity for either mothers or daughters. Mother-child shared physical activity could have a long-term impact on child physical activity levels that should be measured in future studies.

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Symposium 61

2:00 PM-3:15 PM

DISPARITIES IN BREASTFEEDING AMONG VULNERABLE POPULATIONS IN THE US AND MEXICO - IDENTIFYING PROBLEMS AND EXPLORING SOLUTIONS

Lisette T. Jacobson, PhD, MPA, MA¹, Tessa Swigart, PhD², Anabelle Bonvecchio, PhD³

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Optimal breastfeeding recommendations include breastfeeding exclusively for the first six months of life and continuing to breastfeed for at least one year. These recommendations are based on evidence that demonstrates prevention of adverse health outcomes for both mother and infant while decreasing mortality and morbidity. Yet rates of optimal breastfeeding are low throughout the world and are due to a number of factors. Stark disparities in the ability to follow recommended practices exist and mothers who breastfeed at lower rates tend to be less educated, earn less income, are younger, reside in marginalized communities, are unmarried, and are racially and ethnically diverse. Yet these same mothers and their children are also more vulnerable to adverse health outcomes that could be prevented or improved by breastfeeding, including the prevention of micronutrient deficiencies and malnutrition in children, prevention of obesity during childhood and the post-partum period, and decreasing the risk of developing type 2 diabetes mellitus, among many others. The purpose of this symposium is to explore the causes of these disparities and their effects on the ability to follow optimal breastfeeding recommendations, and then to explore successful solutions that aim to reduce these disparities and improve breastfeeding practices. Presentations will focus on programs and strategies to promote breastfeeding among targeted, marginalized communities in rural regions of the United States and Mexico. Findings will be synthesized and discussion generated with the aim to inform interventions that could promote, support and protect breastfeeding among vulnerable populations.

Symposium 61A

NOVEL MULTIFACETED COMMUNITY APPROACHES TO PROMOTE, SUPPORT AND PROTECT BREASTFEEDING

Dr. Lisette T. Jacobson, PhD, MPA, MA

Background: The Kansas Breastfeeding Coalition (KBC) manages a multitude of programs to promote, support, and protect breastfeeding across the state. In collaboration with public health departments, regional foundations, public/private organizations, and communities, the KBC aims to improve exclusive breastfeeding rates via: the Communities Supporting Breastfeeding program, Business Case for Breastfeeding, breastfeeding physician practice designation, Breastfeeding 101, “Becoming a Mom” infant feeding session, child care provider education, and building local breastfeeding coalitions.

Objective: The purpose of this session is to cover critical aspects of each program particularly those that are related to narrowing the gap on breastfeeding disparities.

Methods: The Communities Supporting Breastfeeding (CSB) program incorporates features of each standalone program and offers a breastfeeding designation to participating communities after they meet specific criteria within six sectors of their community: local breastfeeding leadership, peer support, maternity care practices, societal support, employer support, and childcare provider support. The KBC provides an assessment, hospital staff education, coalition building assistance, continuity of breastfeeding care, and education to home visitors. The CSB program was effective July 2014 through June 2017. During each program year, a survey to assess progress toward the designation was administered to all mothers who benefited from breastfeeding services.

Results: Since July 2014, 18 communities representing diverse populations have achieved the CSB designation. About 20 mothers in each of the respective communities participated in the survey ($N=343$). Participants were non-Hispanic white (88%), 26–35 years old (65%), some college (39%) or college degree (35%), WIC enrolled (29%), and earned <\$50,000/year (50%). The majority of women believed local breastfeeding leadership, peer support, and hospital support provided adequate breastfeeding support in their community. Women were less familiar with programs that promoted breastfeeding among employers, businesses, and childcare providers. Communities appeared to benefit from improved exclusive breastfeeding rates.

Conclusions: The CSB program along with other initiatives to promote breastfeeding provide communities with the tools to build a culture of breastfeeding support. The CSB program is currently listed as an “emerging practice” on the Innovation Station website of the Association of Maternal & Child Health Programs.

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Symposium 61B

THE DEVELOPMENT OF A MASS MEDIA SOCIAL MARKETING STRATEGY TO PROMOTE BREASTFEEDING AMONG LOW-RESOURCE COMMUNITIES IN MEXICO

Tessa Swigart, PhD

Introduction: Optimal breastfeeding practices include exclusive breastfeeding for the first 6 months after birth, and continuing to breastfeed for at least one year. Promotional efforts are important in low-resource settings because of disparities that make these populations more vulnerable to adverse health outcomes that could be avoided with optimal breastfeeding practices. In Mexico, breastfeeding rates are low and decreasing among these populations. To address this problem, the Mexican federal poverty alleviation program developed a strategy that included breastfeeding promotion using interpersonal communication.

Objective: The goal of our study was to develop a corresponding social marketing strategy using mass media for communities with limited resources in Mexico and decrease breastfeeding disparities.

Methods: Our methods were comprised of three stages. For the first stage, we performed a secondary analysis prior research in order to understand our population's breastfeeding practices, beliefs, influences, and social norms and determine the behavioral objectives, target audience, and social marketing platform. In the second stage, we used the social marketing framework to design the marketing mix and strategy components. In the third stage, we pretested our strategy ideas with six focus groups from two Mexican states among our target audience, with a total of 47 informants.

Results: Mothers were motivated to do what was best for their baby. However, there were practices contrary to optimal breastfeeding that included giving water and teas soon after birth and introducing solid food and formula to the baby at about 3 months. Our social marketing strategy included an interactive text messaging service, a free informational hotline, TV spots, and billboards. These channels tested well with our focus groups, but the audience indicated some skepticism toward the message themes we tested.

Conclusion: Our strategy channels were well chosen but our main message themes were not easily believed or trusted, possibly they approached practices and beliefs deeply embedded in tradition and culture. To be more successful, believable, and further reduce breastfeeding disparities, the messaging needs to both work in conjunction with the interpersonal communication and also involve a more multi-pronged approach to maximize consistency and effectiveness in order to improve practices and social norms.

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Symposium 61C

ADAPTING A NATIONAL BEHAVIOR CHANGE COMMUNICATION STRATEGY TO INDIGENOUS COMMUNITIES: IMPROVING BREASTFEEDING PRACTICES IN CHIAPAS

Dr. Anabelle Bonvecchio, PhD

Background: Mexico is undergoing a nutritional transition described as malnutrition and micronutrient deficiencies coexisting with obesity and other chronic diseases. Among indigenous groups, this dual burden has grown significantly stunting growth among indigenous children in rural Chiapas by 44% (14% nationally) while the obesity rate is at 8%. These problems are greatly alleviated with optimal breastfeeding practices. As part of the activities of the Mesoamerica Health Initiative 2015, the Health Institute of Chiapas sought a culturally sensitive solution for the state's indigenous population by adapting a national strategy meant to address the nutritional transition, with a strong focus on improving breastfeeding rates.

Objective: The purpose of this project was to conduct formative research with indigenous populations in Chiapas followed by an adaptation of a national interpersonal communication strategy. This approach included developing a mass media communication campaign to positively influence breastfeeding behaviors in indigenous communities of the state.

Methods: The formative research took an iterative approach; first examining behaviors and beliefs about nutrition, breastfeeding and complementary feeding practices, then evaluating the national behavioral priorities in the indigenous context, and pretesting adapted materials based on the findings. The qualitative and quantitative instruments were designed using the social marketing framework and the ecological model and incorporated a mixed methods approach, in which both a quantitative survey was analyzed and integrated with qualitative focus groups and interviews for increased validation.

Results: The results confirmed that the focus of the strategy should remain on the nutritional transition in order to prevent stunting, anemia, obesity, overweight and chronic disease in the future. The behaviors that had been prioritized at the national level should remain but other behaviors that were relevant to Chiapas such as the use of oral rehydration therapy (ORT) and anti-parasites were incorporated. The messages developed for the national strategy had to be adjusted to incorporate local barriers and terminology, and some new messages had to be developed. Additionally, targeted billboards and radio and TV spots were developed based on feedback and adapted to the local indigenous culture and languages.

Conclusions: Indigenous groups in Mexico are widely stigmatized. They receive inadequate healthcare services and are offered culturally insensitive programs. Formative research is needed to determine how to adapt programs in order to better reach these communities and improve breastfeeding behaviors.

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Symposium 62

2:00 PM-3:15 PM

OBSERVATIONS AND INTERVENTIONS TO ADDRESS PARENTAL VACCINE HESITANCY, AN INCREASING SOCIAL NORM IN THE U.S.

Austin S. Baldwin, PhD¹, Jasmin A. Tiro, PhD², Melissa B. Gilkey, PhD³, Avnika B. Amin, MSPH⁴, Austin S. Baldwin, PhD¹, Jasmin A. Tiro, PhD²¹Southern Methodist University, Dallas, TX; ²University of Texas Southwestern Medical Center, Dallas, TX; ³University of North Carolina, Chapel Hill, NC; ⁴Rollins School of Public Health, Emory University, Atlanta, GA

Vaccine hesitancy—delay in acceptance or refusal of vaccination despite availability of services—is becoming more normative in the U.S. National surveys reveal that 40% of parents delayed or refused 1+ vaccines in 2009; and more recently, 88% of healthcare providers reported parental requests to delay a vaccine. As a result, more parents are questioning guideline-based vaccination schedules, providers are uneasy during conversations with parents, and vaccination coverage is falling short of Healthy People 2020 goals for the HPV, influenza, and other vaccines. Understanding why this behavioral phenomenon is growing in the U.S. and developing interventions that address hesitancy is a timely and urgent challenge for behavioral medicine researchers. This symposium will highlight three examples of innovative research on vaccine hesitancy. Melissa Gilkey will present her ongoing research on the importance of provider communication, focusing on parental ratings of the best messages from providers for motivating HPV vaccination. Avnika Amin will describe research on the associations between vaccine hesitancy and moral beliefs and discuss why values-based arguments as opposed to information-based arguments are needed for vaccines. Austin Baldwin will share recent findings from a mobile app self-persuasion intervention that helps parents who are undecided about the HPV vaccine think through their own reasons for vaccination. As the discussant, Jasmin Tiro will facilitate a discussion on advancing the science of vaccine hesitancy given the broader healthcare and social context, so that these major public health discoveries – vaccines – benefit the population. Through this symposium, we aim to increase awareness of vaccine hesitancy and its implication among behavioral medicine researchers and encourage innovative ideas to address this pressing behavioral and public health challenge.

Symposium 62A

PARENTS' VIEWS ON THE BEST AND WORST REASONS FOR HPV VACCINATION: A BEST-WORST SCALING STUDY

Melissa B. Gilkey, PhD

Objective. HPV vaccination could prevent most HPV-related cancers, but only about one-third of U.S. adolescents are vaccinated according to guidelines. To inform efforts to counsel parents more effectively, we sought to quantify their views on the best and worst reasons for HPV vaccination. Based on prior research suggesting that vaccine hesitant parents view pro-vaccine messages differently from other parents, we hypothesized that our findings would vary according to parents' confidence in adolescent vaccination.

Methods. We reviewed the research literature and existing provider communication training materials to identify 11 reasons that providers commonly give for guideline-consistent HPV vaccination. We evaluated these reasons using a novel best-worst scaling (BWS) instrument that we administered to a national sample of parents of adolescents ($n=1,177$) via an online survey. Parents completed 11 choice tasks, which used a balanced-incomplete-block design to present repeated subsets of reasons. We calculated a BWS score for each reason based on the number of times it was chosen, with scores ranging from +1 (always chosen as best) to -1 (always worst). We then re-ran analyses stratifying by parents' vaccination confidence (low/high) as measured by the 4-item Vaccination Confidence Scale.

Results. Parents viewed *cancer prevention* as the best reason for HPV vaccination (BWS score=0.65). This reason scored over three times more highly than *preventing a common infection* (.20), having *lasting benefits* (0.19), or being a *safe vaccine* (0.14). Reasons viewed as worst were: *it is a scientific breakthrough* (-0.21); *I got it for my own child* (-0.30); and *your child is due for it* (-0.35). Stratified analyses indicated small differences in the views of parents with low versus high vaccination confidence ($p<0.001$), but the two groups ranked reasons similarly overall.

Conclusions. As recommended by CDC, providers should emphasize cancer prevention when discussing HPV vaccination, as this reason was prioritized by parents regardless of their vaccination confidence. Several other common reasons, including having vaccinated one's own child, were not highly endorsed and may warrant additional testing. This study illustrates the value of using stated-preference methods to understand public health communication strategies. Our findings provide an evidence base for efforts to support providers in more effectively communicating the value of HPV vaccination so as to increase uptake of this potent cancer prevention tool.

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Symposium 62B

ASSOCIATIONS OF MORAL FOUNDATIONS WITH VACCINE HESITANCY

Avnika B. Amin, MSPH

Background: Clustering of unvaccinated children can result in outbreaks. Most vaccination interventions focus on targeting vaccine-related attitudes. Moral foundations, a system of six values (authority/subversion, fairness/cheating, harm/care, liberty/oppression, loyalty/betrayal, and purity/degradation), have been associated with attitudes and attitudinal shift on various topics such as climate change and philanthropy. They may be useful to better understand vaccine attitudes but have not been examined to date.

Methods: We recruited parents online in two studies. In our first study, we measured vaccine hesitancy using the Parent Attitudes about Childhood Vaccines (PACV) scale, moral foundation relevance, and demographic information. We used unconditional logistic regression models to examine associations between each moral foundation and hesitancy (low, medium, or high). In our second study, we measured vaccine attitudes, moral foundation relevance, demographic information, and agreement with purity- and liberty-violating vaccine beliefs (e.g. “Vaccines contain poisons/toxins/contaminants.” and “Vaccine mandates are excessive government control.”). We developed a multiple regression model to replicate our first study and mediation models to examine the interplay between moral foundations, foundation violations, and vaccine attitudes.

Results: In our first study ($N = 1,007$), compared to low-hesitancy parents, medium-hesitancy parents were more likely to highly endorse purity (aOR: 2.08, 95% CI: 1.27–3.40). High-hesitancy parents were more likely to highly endorse both purity (aOR: 2.15, 95% CI: 1.39–3.31) and liberty (aOR: 2.19, 95% CI: 1.50–3.21). We saw similar results in our second study ($N = 464$). We found evidence of mediation on the purity-hesitancy association through purity- (b: 0.03, 95% CI: 0.01–0.04) and liberty-violating beliefs (b: 0.03, 95% CI: 0.01–0.04) and evidence of mediation on the liberty-hesitancy association through purity- (b: 0.01, 95% CI: 0.001–0.02) and liberty-violating beliefs (b: 0.01, 95% CI: 0.003–0.03).

Conclusions: Our data suggest that vaccine attitudes are linked with moral concerns. Differences in the emphasis of purity and liberty suggest that these foundations may be factored in more heavily by vaccine-hesitant parents. Our data also suggest moral foundations may shape the beliefs one has on a topic beyond the beliefs directly related to the moral foundation. For example, the purity foundation may influence overall attitudes towards vaccines, which in turn promote beliefs that are in line with these attitudes – even beliefs that have seemingly little to do with purity. Our results provide a promising new direction for development and testing of vaccine communications that are value-based rather than information-based.

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Symposium 62C

FEASIBILITY AND EFFICACY OF AN HPV VACCINE APP FOR UNDECIDED PARENTS: A TEST OF SELF-PERSUASION

Austin S. Baldwin, PhD

Objective: Many parents are hesitant about getting the human papilloma virus (HPV) vaccine for their children, and some remain undecided even with a provider recommendation. Self-persuasion – the process of generating one’s own arguments for changing behavior – is potentially an effective approach to address parental hesitancy. However, self-persuasion interventions have not been developed to promote HPV vaccination or for low literacy populations, as they typically have been used among college-educated populations. We developed a mobile app with voiceover narration (in English and Spanish) to elicit parental self-persuasion for adolescent HPV vaccination. In two studies, we evaluated feasibility of self-persuasion tasks (generate and verbalize one’s own HPV vaccination arguments) in a safety-net population (Study 1), and in a randomized trial, we tested the effect of using the app on vaccine decision stage, an interim analysis outcome (Study 2).

Methods: In the feasibility study, we used cognitive interview methodology to solicit feedback on the app and self-persuasion tasks from 45 parents. In the trial, undecided parents ($N=122$) were randomized to one of four app versions with self-persuasion tasks that vary by cognitive engagement (deep vs. shallow) and argument topic choice (yes vs. no). We have currently achieved 75% of target accrual; therefore, we report an interim analysis testing the effect of using the app (any of the four versions) on vaccine decision stage.

Results: In the feasibility study, self-persuasion tasks were rated as easy to complete (M range 1.00 to 2.32 on a 5-point difficult scale), helpful (M range 4.33 to 4.98 on a 5-point helpfulness scale), and 98% successfully completed the tasks. In the trial, results indicate that nearly half of parents (45.9%) moved from being undecided to deciding to get the vaccine, reflecting a medium-to-large effect, $\chi^2(1)=27.03, p<.0001, \phi=.47$. In addition, only 3 parents (2.5%) decided against the vaccine after using the app.

Conclusions: The self-persuasion app was feasible and using it significantly changed parents’ decision stage. We will be (1) identifying which app version is optimal for HPV vaccine initiation and completion, and (2) testing whether basic cognitive and motivational mechanisms (i.e., deep processing, autonomous motivation) hypothesized to underlie self-persuasion mediate the app’s effect.

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Paper Session 31: Digital Health Innovations in Tracking and Self-Monitoring 3:30 PM-3:45 PM

REACTIVITY TO A LONGITUDINAL SMARTPHONE-BASED TIME-INTENSIVE PHYSICAL ACTIVITY ASSESSMENT

Eldin Dzubur, Ph.D.¹, Genevieve F. Dunton, PhD, MPH², Stephen Intille, PhD³

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Purpose: Reactivity, the change in behavior as a result of knowing one is being measured, is a phenomenon that is both acknowledged and well-understood in the measurement of physical activity. On the other hand, studies using ecological momentary assessment (EMA), a real-time sampling strategy, generally find little reactivity in participants, despite intensive sampling in free-living situations. However, such studies have been limited to the measurement of psychological constructs (e.g., body image perception) and behaviors unrelated to physical activity (e.g., drinking) as outcomes. There is limited literature on how the use of EMA, as well as both EMA and accelerometers, to measure physical activity as an outcome may induce reactivity (i.e., change in activity levels) in participants. The purpose of this study was to test for reactivity to the application of a longitudinal smartphone-based time-intensive physical activity measurement protocol.

Methods: Adolescents between the ages of 14 and 18 (N=44) completed random EMA prompts at two-hour intervals and context-sensitive EMA prompts after moments of inactivity or activity, while wearing accelerometers and completing an assisted end-of-day recall activity for 14 days. Participants wore accelerometers and carried smartphones without EMA for another 14 days. Participants were randomized into groups receiving the full (i.e., EMA plus accelerometer) protocol in the first two weeks or the last two weeks. Multiple multilevel regressions were used to examine temporal trends and differences in physical activity and sedentary time as measured by accelerometers due to exposure to the EMA protocol and order of exposure.

Results: Participants who received the EMA plus accelerometer protocol in the last two weeks had more light physical activity during the EMA plus accelerometer component than accelerometer only, but had increasing sedentary time throughout the measurement period. Conversely, those who received the EMA plus accelerometer protocol in the first two weeks were more sedentary and had less MVPA during the EMA plus accelerometer protocol, as well as decreasing sedentary and increasing MVPA time throughout the study. EMA compliance did not differ between protocols, but decreased over time.

Conclusions: There was evidence for differential reactivity contingent on the deployment of EMA at the beginning of a study or after a period of accelerometer measurement. Further research is needed to examine how EMA questionnaires alone affect physical activity and sedentary behavior in participants by leveraging onboard smartphone accelerometers to determine whether the effects of reactivity in EMA protocols may be minimized by removing the presence of external sensors.

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Paper Session 31: Digital Health Innovations in Tracking and Self-Monitoring 3:45 PM-4:00 PM

PATTERNS OF FITBIT USE AND ACTIVITY LEVELS THROUGHOUT A PHYSICAL ACTIVITY INTERVENTION

Sheri J. Hartman, PhD, Sandahl Nelson, MS, Lauren Weiner, BA

University of San Diego, California, La Jolla, CA

Background: There has been a rapid increase in the use of technology-based activity trackers to promote behavior change. However, little is known about how individuals use these trackers on a day to day basis or how tracker use relates to increasing physical activity.

Objective: The aims were to use minute level data collected from a Fitbit tracker throughout a physical activity intervention to examine patterns of Fitbit use and activity, and their relationships with success in the intervention based on ActiGraph measured moderate-to-vigorous intensity physical activity (MVPA).

Methods: Participants were 42 female breast cancer survivors randomized to the physical activity intervention arm of a 12-week randomized controlled trial. The Fitbit One was worn daily throughout the 12-week intervention. ActiGraph GT3X+ accelerometer was worn for 7 days at baseline (pre-randomization) and end of intervention (week 12). Self-reported frequency of looking at activity data on the Fitbit tracker and app/website was collected at week 12.

Results: Adherence to wearing the Fitbit was high and stable, with a mean of 88% of valid days over 12 weeks (SD=14). Greater adherence to wearing the Fitbit was associated with greater increases in ActiGraph measured MVPA ($b_{\text{interaction}} = 0.35, P < 0.001$). Participants averaged 182.6 minutes/week (SD=143.9) of MVPA on the Fitbit, with significant variation in MVPA over the 12 weeks ($F=1.91, p = 0.037$). The majority (67.5%) of participants reported looking at their tracker or looking at the Fitbit app or website once a day or more. Changes in Actigraph measured MVPA were associated with frequency of looking at one's data on the tracker ($b=-1.36, P = 0.07$) but not significantly associated with frequency of looking at one's data on the app or website ($P = 0.36$).

Conclusions: This is one of the first studies to explore the relationship between use of a commercially available activity tracker and success in a physical activity intervention. A deeper understanding of how individuals engage with technology-based trackers may enable us to more effectively use these types of trackers to promote behavior change.

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Paper Session 31: Digital Health Innovations in Tracking and Self-Monitoring 4:00 PM-4:15 PM

DIGITAL TRACKER DATA FROM OVER 100,000 INDIVIDUALS SHOW LOWER ACTIVITY LEVELS IN INDIVIDUALS WITH MULTIPLE CHRONIC CONDITIONS

Shefali Kumar, MPH, Tom Quisel, N/A, Luca Foschini, PhD, Jessie Juusola, PhD

Evidation Health, San Mateo, CA

Objectives: Individuals with multiple chronic conditions (CCs) self-report greater disease burden and lower quality of life than those without. Behavioral data can provide additional insight into how CCs impact an individual's health and well-being. We aimed to quantify whether the presence of multiple and different types of CCs are associated with changes in behavior related to physical activity and sleep patterns.

Methods: Members of an online health and activity-tracking community (Achievement, Evidation Health Inc, San Mateo, CA) were asked to participate in a health survey. Participants reported their diagnoses by selecting from a list of 34 CCs. For each participant, we considered the number of CC diagnoses reported, the number of cardiac and metabolic comorbid conditions (CMCC) reported and whether a mental health illness was reported. Data collected from digital trackers over the past year were used to calculate per-participant overall median and Coefficient of Variation (CV) for daily step counts and sleep duration. We examined two cohorts: a Step Cohort of 155,638 individuals who had >10 days of step data, and a Sleep Cohort with 91,995 individuals who had >10 days of sleep data. We considered both median and CV of daily steps and sleep duration as target variables. For each target variable, we ran two models, the first using the number of CCs and the second using the number of CMCCs as explanatory variables. All models controlled for age, sex, education level and race. The CMCC models also controlled for presence of a mental health diagnosis.

Results: On average, participants took 6,708 steps/day and slept 6.8 hours/night. Number of CCs and number of CMCCs were both negatively associated with median daily step count and hours of sleep/night. Each additional CC (any of the 34 conditions) was associated with a decline of 254 steps/day (95% CI [243, 265]; $p < 0.001$), whereas each additional CMCC was associated with almost double that amount, a decline of 493 steps/day (CI [412, 574]; $p < 0.001$). Count of CCs was also associated with less sleep, higher step CV and higher sleep CV, while CMCC count was associated with less sleep and higher sleep CV.

Conclusions: In this analysis, we were able to quantify the decrease in physical activity levels and sleep duration in a population with multiple CCs and CMCCs. Further research should be conducted to determine if this relationship is causal and if tracker-based behavioral data can help detect multiple CCs.

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CITATION AND MERITORIOUS AWARD WINNER

Paper Session 31: Digital Health Innovations in Tracking and Self-Monitoring 4:15 PM-4:30 PM

USABILITY TESTING OF A WEB-BASED INTERACTIVE TOOL TO REDUCE CHILDHOOD OBESITY RISK IN URBAN MINORITY YOUTH

Sandra Verdaguer, BS, MS¹, Katrina F. Mateo, MPH², May May Leung, PhD, RD³

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Introduction: Childhood obesity is still one of the most serious public health issues in the United States, especially among minority youth. There is evidence that technology-enhanced approaches can be effective for promoting healthy behavior change. The purpose of this study was to test the usability of early prototypes of Intervention INC, an interactive web-based tool promoting healthy dietary behaviors to reduce childhood obesity risk in African-American (AA)/Black and Latino youth.

Methods: AA/Black and Latino children ages 9 to 13 were recruited to participate in two rounds of usability testing conducted in June and July 2017. To inform refinement of the web-based tool prototype, a modified *think-aloud* method was utilized. Self-reported surveys and field notes were collected. Sessions were audio recorded and systematically reviewed to identify usability issues and areas for improvement.

Results: Twelve children, with a mean age of 10.9 ± 1.2 years (33% female; 67% AA/Black) participated. Round 1 consisted of 2 dyad sessions and 2 individual sessions; Round 2 consisted of 6 individual sessions. Testing highlighted overall positive experiences with the interactive tool, especially related to page navigation, sound effects, and color schemes. Opportunities to incorporate additions to increase engagement and improve usability were identified. Specific usability issues were classified into seven themes: appearance, content, terminology, navigation, operational features, special effects, and storyline. Changes to the web tool after Round 1 included adding a navigation guide, making clickable icons more visible, improving graphic designs, such as color scheme, background and pop-up images, and fixing programming errors. In Round 2 of testing, the number of usability issues decreased in five out of the seven themes.

Conclusions: Findings from both rounds of testing will inform further development and finalization of the tool. Preliminary findings of early prototypes suggest that the use of this web-based tool could be an engaging approach to promote healthy eating behaviors among minority youth. The web-based tool will be tested using a two-group pilot randomized study targeting fruit/vegetable and water intake to reduce childhood obesity risk in AA/Black and Latino youth. Future usability testing of web-based tools with youth using a *think-aloud* approach should consider dyad assessments (rather than individual) to facilitate more meaningful feedback in a peer-to-peer environment.

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MERITORIOUS AWARD WINNER
Paper Session 31: Digital Health Innovations in Tracking and Self-Monitoring 4:30 PM-4:45 PM

DIETARY SELF-MONITORING WITH NEW TECHNOLOGY: EXAMINING DIFFERENCES IN WEIGHT LOSS USING DIETARY SELF-MONITORING MOBILE APPS

Caroline G. Dunn, MS, RD¹, Gabrielle Turner-McGrievy, PhD, MS, RD², Sara Wilcox, PhD², Destiny Byrd, N/A²

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Background: Dietary self-monitoring (DSM) of foods and beverages is associated with increased weight loss in behavioral interventions; however, DSM may be burdensome and adherence may decrease over time. Novel methods of DSM, including apps that track food using photos, may decrease user burden and increase DSM to improve weight loss outcomes. The purpose of the Self-Monitoring Assessment in Real Time (2-SMART) Study was to compare a commercially-available photo app to a traditional DSM app for weight loss as part of a 6-month randomized behavioral weight loss intervention.

Methods: Overweight or obese adults (n=42; mean BMI=34.7 ± 5.79 kg/m²) were randomized to track their diet with either a traditional mobile app, FatSecret (FS, n=19), or a photo DSM app, MealLogger (ML, n=23). All participants received twice weekly podcasts with identical behavioral weight loss information, and were instructed to track all foods and beverages consumed. Weight (kg) and energy intake (2 dietary recalls) were assessed at baseline and 6 months. Data were analyzed using SPSS software. Intent-to-treat analysis with baseline weights carried forward was used to address issues of missing data.

Results: At 6 months, 74% of participants completed the intervention. Mean weight loss was -1.7 ± 4.1 kg and did not differ by group (FS, -2.1 ± 5.3 kg; ML, -1.3 ± 3.0 kg; p=0.57). There were no significant differences between groups for the number of podcasts downloaded out of 48 possible episodes (FS, 15.0 ± 13.9; ML, 13.6 ± 13.0; p= 0.75) or for the number of days any foods were tracked out of 180 possible days (FS, 69.6 ± 61.0; ML, 44.2 ± 49.9; p=0.15). Weight loss was significantly and positively correlated with the total number of days tracked (r=0.64, p<0.001), but not with the number of podcasts downloaded (r=-0.26, p=0.10).

Conclusions: In this trial, frequency of DSM was significantly associated with overall weight loss regardless of the method of tracking used. However, DSM rates were low for all participants, regardless of group, and participants tracked food less than 30% of days. Weight loss was also fairly minimal (0.28kg/month), and not significantly different between groups. Increasing user engagement with any type of DSM may play an important role in behavioral weight loss interventions to increase frequency of use and improve weight loss outcomes.

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Paper Session 32: Improving Quality of Life Among Cancer Patients 3:30 PM-3:45 PM

COORDINATION OF CARE AND HEALTH-RELATED QUALITY OF LIFE AMONG URBAN LATINA BREAST CANCER SURVIVORS

Hayley S. Thompson, Ph.D.¹, David W. Lounsbury, PhD², Maida Y. Herrera, MPH³, Carmen R. Isasi, MD/PhD⁴, Kristin Bright, PhD⁵, Katarina Sussner, PhD, MPH⁶, Heiddis Valdimarsdottir, n/A⁷, Gary Winkel, PhD⁸

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A number of studies report lower health-related quality of life (HRQOL) among Latina breast cancer survivors compared to survivors of other ethnic groups. However, few studies have investigated mechanisms that might account for low HRQOL in this group, with some noting that socioeconomic and cultural factors may play a role. Systemic efforts with healthcare settings to improve the quality of care may be vital to improving HRQOL among Latina survivors. One strategy that may be effective is coordination of care (CoC): the incorporation of information from previous healthcare encounters into the current and future healthcare of the survivor. In fact, CoC is among the recommendations for breast cancer follow-up and management offered by the American Society for Clinical Oncology and proposed as a patient self-reported indicator of survivorship care quality by the Institute of Medicine. The current study focused on Latina survivors' perception that their main provider for cancer-related follow-up care communicated with their other healthcare providers and was aware of the range of care the survivor received. Participants were 169 Latina breast cancer survivors between 3 and 48 months post-treatment residing in the metropolitan Detroit and New York City areas. Measures included the CoC domain of the Components of Primary Care Instrument. Participants also completed the Functional Assessment of Cancer Therapy – Breast (FACT-B) which includes physical well-being (PWB), social well-being (SWB), emotional well-being (EWB), functional well-being (FWB), and breast cancer concerns (BCS) subscales. On average, participants reported seeing 4.6 healthcare providers in the past 2 years as part of their cancer-related follow-up care and 75.2% reported that their medical oncologist is their main provider of this care. After controlling for covariates of HRQOL outcomes (specifically, age, household income, employment status, preferred language, study site, and total number of healthcare providers seen for any reason in the past 2 years), multivariate regression analysis revealed that greater CoC was associated with higher scores on PWB (p<.02), EWB (p<.009), FWB (p<.02), and the total FACT-B (p<.009). Results suggest that interventions targeting fragmented systems of survivorship care delivery can have positive effects on outcomes among Latina breast cancer survivors, an especially vulnerable patient population.

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Paper Session 32: Improving Quality of Life Among Cancer Patients 3:45 PM–4:00 PM

“IT DOES ADD UP, EVEN WITH INSURANCE”: A MIXED METHODS STUDY OF LONG-TERM OUT-OF-POCKET COSTS DUE TO BREAST CANCER AND LYMPHEDEMA

Lorraine T. Dean, ScD¹, Yusuf Ransome, MPH, DrPH², Livia Frasso Jaramillo, BA¹, Yuehan Zhang, ScM³, Kevin D. Frick, MA, PhD¹, Lauren Nicholas, MPP, MPhil, PhD¹, SV Subramanian, MA, MPhil, PhD⁴, Kala Visvanathan, MHS, FRACP, MD¹, Kathryn H. Schmitz, MSeD, MPH, PhD⁵

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Introduction: Economic burden after breast cancer is exacerbated by adverse treatment effects, such as breast cancer-related lymphedema – a chronic condition caused by pooling of lymphatic fluid after lymph node removal during breast cancer surgery -- which patients cite as more distressing than cancer itself. Most studies that have assessed economic burden due to lymphedema used administrative data, and only documented costs in the initial years after cancer. Administrative data misses out-of-pocket expenses thereby underestimating total cost. Moreover, patients' experiences on how economic burden affect them long-term are not sufficiently documented. We therefore conduct a mixed methods study to analyze the role of out of pocket costs among persons with and without lymphedema, among long-term breast cancer survivors.

Methods: In 2015, a prospective sample of 129 breast cancer survivors from Pennsylvania and New Jersey completed: a baseline self-reported survey of demographics, socioeconomic position, checklist of financial challenges since cancer, cancer treatments, insurance, and health; and monthly longitudinal diaries of medical visits and out-of-pocket costs over 12 months. A subset of 40 participants were randomly selected for in-person 30-minute semi-structured interviews to further investigate economic challenges. GLM regression produced dollar amount differences among those with lymphedema and without lymphedema.

Results: 46.5% of participants had lymphedema. Mean age was 63 (SD=8). Average time since cancer was 12 years (SD=5). Over 98% had insurance. Although those with lymphedema cited the same number of financial challenges experienced since cancer, after adjustment for baseline covariates, annual health-related out-of-pocket costs and productivity losses totaled \$2,597 compared to \$1,770 for those without lymphedema ($p<0.001$). Interviews suggested that the cascading nature of economic burden on long-term savings and work opportunities, and insufficiency of insurance to cover lymphedema-related needs drove cost differences. Interviewees reported that higher costs led to delayed retirement, reduced employment, or inability to access lymphedema care.

Conclusion: Long-term breast cancer survivors with lymphedema may experience up to 47% higher annual out-of-pocket costs and sustained impact on savings and productivity that influences their ability to manage lymphedema. Further research should explore patient-driven solutions to reducing economic burden for this population.

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Paper Session 32: Improving Quality of Life Among Cancer Patients 4:00 PM–4:15 PM

DEVELOPMENT OF A NOVEL MEASURE OF ADVANCED CANCER PATIENTS' PERCEIVED UTILITY OF SECONDARY GERMLINE FINDINGS

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Background: Treatment decisions for advanced cancer patients can be informed by genetically sequencing their tumor through tumor genomic profiling (TGP). TGP can reveal “secondary germline findings” (SGFs)—information about a patient’s inherited risks for cancer and other disorders. SGFs may have diverse benefits and harms, which may influence patients’ decisions about how to manage this risk information. Little is known regarding patients’ beliefs about the personal and clinical utility of SGFs; therefore, we sought to develop a measure of patient perceptions of the utility of SGFs.

Method: We developed a draft survey (19 items; 5-point response scale: 1=“strongly disagree” to 5=“strongly agree”) based on literature and patient interview data ($n=40$). We evaluated and refined the survey through 2 rounds of cognitive interviews with 10 advanced cancer patients who received SGFs from TGP. Participants were directed to “think aloud” as they answered the items, and share ideas about the utility of SGFs based on their experiences. The final survey (17 items) has been integrated into an ongoing prospective study of advanced cancer patients learning SGFs from TGP; descriptive statistics were calculated from available baseline data ($n=59$).

Results: Cognitive interviews indicated that 2 of the proposed survey items required rephrasing to improve comprehension, 1 item was seen as redundant, and 1 item was irrelevant. Interviewees found the survey easy to answer “all” or “most” of the time (90%), and believed the response scale was “not at all difficult” to use (70%). Preliminary baseline data suggest that the final 17-item scale has high internal consistency (Cronbach’s $\alpha=0.94$). On average, participants most strongly endorsed perceptions that SGFs will help doctors learn to care for future patients ($M\pm SD=4.58\pm 0.89$ on 5-point scale), be useful to doctors (4.46 ± 0.90), and that the meaning of their SGFs may change in the future (4.44 ± 0.93). Participants were least certain that their SGFs will help reduce their family’s chances of getting cancer (2.83 ± 1.33), lessen their confusion about their cancer (3.37 ± 1.07), or be easy to understand (3.42 ± 0.89).

Conclusion: We have developed a novel scale that shows promise for measuring advanced cancer patients’ perceptions of the personal and clinical utility of SGFs. Future research will confirm the psychometrics of this measure, and determine whether and how these beliefs contribute to patients’ decisions and responses in the TGP context.

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CITATION AWARD WINNER
Paper Session 32: Improving Quality of Life
Among Cancer Patients 4:15 PM-4:30 PM

IMPACT OF OUTPATIENT SPECIALTY PALLIATIVE CARE ON SURVIVAL IN ADULTS WITH ADVANCED CANCER: A META-ANALYSIS OF RCTS

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Background: Palliative care refers to care aimed at supporting quality of life, especially for patients with serious illnesses. Increasingly, palliative care programs have formalized, and national oncology guidelines now recommend outpatient specialty palliative care for all patients with advanced cancer beginning early after diagnosis. Two meta-analyses have shown outpatient specialty palliative care to benefit quality of life, but the one meta-analysis of survival outcomes had methodologic limitations and null findings. As patients, families, and clinicians worry that a palliative approach could hasten death, meta-analytic findings on survival have implications for the utilization and dissemination of palliative care.

Method: Following PRISMA guidelines, we conducted a systematic review and meta-analysis of survival outcomes in RCTs of outpatient specialty palliative care interventions for patients with advanced cancer. Unlike prior meta-analyses, results were stratified by key quality criteria, examined a longer follow-up duration, and employed novel methods and software for meta-analyzing survival data, namely the use of composite Kaplan-Meier curves reconstructed from published figures using digital extraction software.

Results: Survival data were available from 8 RCTs of outpatient specialty palliative care, including 5 high-quality studies (n=1,491) – 3 of which had Kaplan-Meier figures with long-term follow-up data (n=680) – as well as 3 lower-quality studies that had methodologic problems (n=580) or few cancer patients (n=21). In the high-quality studies, outpatient specialty palliative care was associated with better 1-year survival relative to usual care (56% v 42%, p<.001). In sensitivity analyses, a survival advantage was also observed at 6, 9, 15, and 18 months. In analyses of composite data reconstructed from published figures, patients receiving palliative care lived 4.56 months longer than those receiving usual care (14.55 v 9.99 months, p=.003), as indicated by a slower rate of mortality (hazard ratio=.743, p=.003).

Discussion: These meta-analytic findings suggest that in addition to supporting quality of life, outpatient specialty palliative care interventions may prolong survival in advanced cancer. Findings have implications for clinical practice and suggest methods psychosocial investigators can use to study mortality outcomes.

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Paper Session 32: Improving Quality of Life
Among Cancer Patients 4:30 PM-4:45 PM

PROVIDER-PATIENT RELATIONSHIP: PREDICTORS OF BLACK CANCER PATIENTS PERCEIVED QUALITY OF CARE AND HEALTH OUTCOMES

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Introduction: Disparities in quality of care and health outcomes among racial and ethnic minorities are well documented. Compared to white cancer patients, minority patients are more likely to experience poorer quality interactions with their providers, which contribute to health disparities. Research focusing on the interpersonal relationship between providers and black cancer patients and its effects on health outcomes is scant. Thus, we examined whether the Provider-Patient Relationship (PPR) is associated with black patient's overall health outcomes. We also examined whether the association between PPR and health outcomes was mediated by quality of care.

Methods: We used Health Information National Trend Survey (HINTS) data from 2011 to 2014. A sample of 252 black cancer patients (age 64.0 ± 13.0 years) provided evaluable data. The outcome variables were patients' self-reported quality of care and self-rated health. The predictor variable was PPR, calculated from eight HINTS items assessing providers' communication with patients, emotional support, time spent on patients, and involvement of patients in decision making; factor analysis showed that these variables loaded onto a single factor (with factor loadings >0.7). Covariates included marital status, education, employment, gender, age and income. Multivariable linear regression was used to evaluate a mediation model (association between PPR and self-rated health, PPR and quality of care, and the impact of quality of care on the relationship between PPR and health).

Results: Most participants were female (61.1%), unemployed (71.8%), and unmarried (64.3%). The most common cancer types were: breast cancer (23.0%), prostate cancer (19.4%) and colon cancer (8.7%). After controlling for covariates, the multivariable model showed that PPR was significantly associated with both self-rated health (p<0.01) and quality of care (p<0.01). When PPR and quality of care were added to the same model, the analysis showed that quality of care mediated the impact of PPR on self-rated health (p=0.015), and quality of care accounted for 72% of the variance in self-rated health.

Conclusion: Providers' positive interpersonal relationships—including effective communication and involvement in decision making—has a significant positive influence on the health of minority patients, and this influence may be due to increased positive perception of quality of care. Future studies could develop an intervention to enhance provider-patient relationships to help improve patient health.

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Paper Session 33: Promoting Physical Activity Among Youth 3:30 PM-3:45 PM

PHYSICAL ACTIVITY AND HEALTH-RELATED QUALITY OF LIFE IN CHILDREN AND ADOLESCENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Physical activity is associated with broad physical and psychological benefits in children and adolescents. One construct which may universally characterize functioning across various pediatric populations is health-related quality of life (HRQOL). A number of studies have found positive associations between physical activity and HRQOL; however, to date no systematic review and meta-analysis has quantified the effect of physical activity on HRQOL in children and adolescents.

Methods: A systematic search of PubMed, PsycINFO, and ProQuest Dissertation Abstracts identified 1081 relevant, non-duplicate articles. From these candidate articles, 33 studies, including both descriptive and pre-post intervention designs, met inclusion criteria and were included in the meta-analysis.

Results: Descriptive studies yielded a small, positive effect of physical activity on HRQOL based on child-reports (Hedge's $g = .302, p < .001$) and a negligible effect based on parent-proxy reports (Hedge's $g = .115, p = .101$). Intervention studies yielded a small, positive effect of physical activity intervention on HRQOL based on child-reports (Hedge's $g = .279, p = .014$) and a medium, positive effect based on parent-proxy reports (Hedge's $g = .522, p = .012$). However, effects across two of the models were attenuated by the removal of a single intervention study. Hypothesized moderators, including chronic disease status, weight status, sex, and study rigor, did not significantly moderate the effect of physical activity on HRQOL. Exploratory analyses did not find intervention contact hours or age to moderate the effect of physical activity on HRQOL.

Conclusion: Findings support the primary hypothesis that increased levels of physical activity are related to better HRQOL in youth, although the magnitude of these effects did not represent a minimal clinically important difference (MCID) in most studies. Results suggest that 6–14 youth would need to participate in an existing exercise intervention for one patient to see a beneficial improvement in HRQOL. Future studies are needed to assess HRQOL in youth before and after high-quality exercise interventions to quantify the type, frequency, duration, and intensity of physical activity needed to change HRQOL to a clinically meaningful level. Cross-disciplinary collaborations are indicated to develop more robust physical activity interventions and achieve greater gains in psychosocial outcomes in youth.

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Paper Session 33: Promoting Physical Activity Among Youth 3:45 PM-4:00 PM

AN EXERGAMING RCT IMPROVES CARDIOMETABOLIC RISK FACTORS IN CHILDREN WITH OVERWEIGHT AND OBESITY

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Background: Exergaming, or video gaming that involves physical activity, can lead to improvements in overall health, specifically in adolescents with obesity. The purpose of the GameSquad study was to test the efficacy of exergaming to reduce adiposity in overweight and obese children.

Methods: The study randomly assigned 46 children ages 10 to 12 years, having a BMI percentile of 85 or greater, to either an exergaming condition or a control condition. Participants attended screening, week 0, and week 24 clinic visits where the following measures were collected: height, weight, DXA scan of fat mass, resting blood pressure, and a fasting blood draw. Children assigned to the exergaming condition were provided an Xbox 360, Kinect, four Kinect games, and a 24-week Xbox Live subscription along with a standardized curriculum to perform three days of 60-minute exergaming sessions with increasing intensity per week in their home over a 24-week period. Participants were also asked to wear a Fitbit Zip throughout the intervention to monitor steps/day and attend video chat sessions with a Fitness Coach through the Xbox weekly for the first six weeks, then biweekly thereafter to assist with intervention retention. Individuals assigned to the control condition were provided the Xbox bundle at no cost following their final clinic visit.

Results: Of the 46 randomized participants, 54% were male and 57% were African American. The average compliance to the intervention, defined as completed days/week versus expected days/week, was 88.5%. Using repeated measures ANCOVA controlling for age and sex, there was a significant effect of the intervention on improving total cholesterol ($p=0.02$) and diastolic blood pressure ($p=0.006$). There was no intervention effect for change in BMI z-score, fat mass or % fat mass, glucose, HDL cholesterol, or systolic blood pressure.

Conclusion: Exergaming at home for 24 weeks improved cardiometabolic factors for children ages 10–12 years without changing body mass or fat mass. Given the high adherence to the exergaming physical activity, further research is needed to explore exergaming as a method of improving childhood health.

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CITATION AND MERITORIOUS AWARD WINNER

Paper Session 33: Promoting Physical Activity Among Youth 4:00 PM-4:15 PM

ASSESSING ACTIVITY ACROSS THE 24-HOUR DAY IN OBESE LATINO YOUTH AT RISK FOR DIABETES

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The activity continuum experienced in a 24-hour day includes moderate-to-vigorous physical activity (MVPA), light physical activity (LPA), sedentary behaviors (SBs), and sleep. However, the majority of the research to date has focused on the associations between MVPA and health outcomes. LPA, SBs, and sleep, are associated with reduced type 2 diabetes (T2D) risk in adults, independent of MVPA, yet little is known about these behaviors and diabetes risk in youth. To address this gap, this study examined the associations between time spent in activity levels across the 24-hour cycle and T2D risk in obese Latino youth.

Participants included 160 obese Latino youth ($BMI\%=98.2 \pm 1.4$, $Age=15.3 \pm 0.9$). Anthropometrics were taken to assess height, weight, BMI and body fat (BF%). A 2-hour oral glucose tolerance test (OGTT) was used to assess fasting and 2-hour glucose and insulin resistance (HOMA-IR). Activity was measured using the 3-Day Physical Activity Recall. Compliance with 24-Hour activity guidelines which include daily recommendations for MVPA (≥ 60 minutes of MVPA), screen time (≤ 2 hours), and sleep (> 9 hours), was also assessed. T-tests were used to assess differences in activity by sex and one-way ANCOVAs were used to explore differences in T2D risk by the number of activity guidelines achieved after adjusting for age, sex, and BMI.

Girls reported more MVPA ($M=119.5 \pm 91.0$ vs. 87.2 ± 75.3 , $p=.016$) and LPA ($M=82.7 \pm 42.9$ vs. 62.8 ± 37.8 , $p=.002$) compared to boys. Boys spent more time in VPA and SBs; however, these differences were not significant. 63% of youth met MVPA recommendations, yet boys and girls still averaged ~10 hours of SBs per day. A dose-response pattern between activity guidelines and T2D risk was observed, whereby youth meeting all three guidelines exhibited 11% lower 2-hour glucose and 64% lower HOMA-IR scores compared to youth who did not meet any guidelines.

These findings demonstrate that despite most youth meeting activity recommendations, the excessive amount of time spent in SBs, may still contribute to risk for cardiometabolic disease. These data also suggest that the sum of time spent in activity, screen time, and sleep, can have an impact on T2D risk. This study highlights the importance of assessing activity across the 24-hour cycle in order to increase our understanding of activity patterns in high-risk youth and inform future physical activity promotion and disease prevention strategies aimed at reducing T2D in this high-risk population.

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Paper Session 33: Promoting Physical Activity Among Youth 4:15 PM-4:30 PM

CHILDCARE CENTER REGULATIONS ON FREE PLAY AND OUTDOOR TIME ASSOCIATED WITH CHILDREN'S PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOR

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Background: The majority of preschool-aged children do not meet national recommendations of 2–3 hours/day of moderate-to-vigorous physical activity (MVPA). Given most children spend time in childcare centers, the purpose of this study was to examine the association of childcare center regulations on children's physical activity.

Methods: This observational trial examined cross-sectional associations among 10 childcare centers' regulations and play environments with 105 preschoolers' in-school MVPA and sedentary behavior (SB). Center directors completed surveys detailing MVPA and SB regulations, and children wore Actigraph GT3X+ accelerometers during the school day. Descriptive characteristics, bivariate correlations, and independent sample *t*-tests were used to examine associations among center regulations with children's activity levels.

Results: Directors reported providing 124.6 ± 81.3 min/day of free play and 78.3 ± 23.0 min/day of outdoor play. Children engaged in an average of 67.7 ± 22.6 min/day MVPA at school including 21 min/day of VPA, plus 226 min/day of SB. Children's MVPA was inversely related with SB at school ($r=-0.83$, $p<.001$). Children in centers with ≥ 120 min/day of free play had higher MVPA (74 vs. 62 min/day, $p=0.004$), higher VPA (25 vs. 17 min/day, $p=0.0004$), and less SB (215 vs. 235 min/day, $p=0.006$) than centers who offered ≤ 120 min/d of free play. In centers with multiple play areas including an open space for running and a path/track, children engaged in higher MVPA (72 vs. 62 min/day, $p=0.03$) and VPA (23 vs. 17 min/day, $p=0.005$) vs. those centers with fewer structures. Children's MVPA and SB did not vary by whether or not the center had a written PA or electronic device policy, whether or not the center withheld PA due to misbehavior, the frequency with which teachers led structured PA, the amount of allowed screen-time, or the variety and amount of portable play equipment.

Conclusion: Identifying ways to support centers and teachers to provide more unstructured free time with supportive play equipment is a priority to increase physical activity levels in young children.

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Paper Session 33: Promoting Physical Activity Among Youth 4:30 PM-4:45 PM

AN AFTER SCHOOL PHYSICAL ACTIVITY INTERVENTION FOR UNDERSERVED ADOLESCENTS: MOVING FROM FEASIBILITY TO THE EFFICACY TRIAL

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Preliminary data from an afterschool program feasibility trial will provide the evidence-based methods for developing a large-scale efficacy trial of the Connect through Positive Leisure Activities for Youth ('Connect') afterschool physical activity (PA) program. The Connect intervention, which is based on social development theory and the social mechanisms highlighted by Self-Determination Theory and Achievement Goal Theory, aims to increase the PA of underserved (i.e., low income, minority status) middle school youth within pre-existing afterschool programs (ASPs). The intervention is designed to improve several key social mechanisms within ASPs overlooked in previous interventions (e.g., developing friendship and connection to peers and staff through PA; group belonging, including positive peer PA norms and tangible support) that are key predictors of youth PA. The research team recently completed a feasibility trial (NIH R21 HD077357) within 6 ASPs (3 intervention vs. 3 controls) for underserved middle school youth that was the first intervention to date to address youth PA social mechanisms.

A regression model (pooled across imputations), controlling for baseline MVPA, site, bmi, and gender significantly predicted MVPA ($F[5,219]=46.17$, $p < 0.001$, $R^2 = 0.51$), with youth in the social intervention (vs. comparison) showing an increase of 8.61 min of MVPA at post ($B=8.61$, $SE: 3.63$, $pt(118)=2.60$, $p=.01$), praising [$t(118)=1.98$, $p=.05$], participating with youth [$t(118)=5.93$, $p=.000$], youth PA social supports [$t[47]=3.09$, $p=.000$] and connections with peers [$t[118]=3.68$, $p=.000$]. Process evaluation indicated adequate dose and fidelity of all program essential elements, and staff readiness assessments indicated high levels of program acceptability. Findings from the feasibility trial are used to inform the proposed R01 Efficacy trial, which expands on the intervention's novel translational approach by targeting program staff as instrumental for sustainable changes in social mechanisms within the ASP setting for increasing the daily PA of underserved adolescents. We will highlight the importance of community-based participatory approaches, the use of critical process measures (e.g., process evaluation; readiness assessment, systematic observations), and assessment of key findings for developing a large-scale efficacy trial.

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Paper Session 34: Nudging Healthier Food Options 3:30 PM-3:45 PM

THE INFLUENCE OF CHAOS IN THE HOME ON THE HOME FOOD ENVIRONMENT FOLLOWING A WEIGHT-LOSS PROGRAM

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A disorganized, unpredictable home environment can put children at risk for obesity, suggesting a link between the general home environment and an obesogenic home food environment (i.e. lots of high fat foods and few low-fat choices). The effect of home-chaos on weight control in adults and reciprocal effects between general and food environments have not been examined. This study explored the association between a chaotic home environment and participation in a commercial weight loss program as they related to foods kept in the home. It was hypothesized that a more chaotic home environment would be associated with more high-fat foods and fewer low-fat foods in the home. Further, it was expected that the influence of chaos on foods in the home would differentially influence participants in a commercial weight loss program, who would have been directed to change their food environment, compared to those who undertook a self-guided approach to weight loss. Specifically, it was hypothesized that chaos in the home would have a minimal influence on those attempting self-guided weight loss, and for those following a commercial weight loss program high chaos in the home would negatively predict number of low-fat foods and positively predict number of high fat foods, as chaos in the home would make the changes suggested in a structured behavioral weight loss program more challenging to enact.

The Confusion Hubbub and Order Scale (CHAOS) and the Home Food Inventory (HFI) were completed by adults following participation in 6-months of Weight Watchers (WW; n=47) or self-guided weight loss (SG; n=55). Two sequential regressions were performed (outcomes HFI high-fat foods and HFI low-fat foods) including number of children in the home, income, CHAOS, condition, and an interaction between CHAOS and condition.

Both models were statistically significant (Low-fat foods: $F(5,96)=3.55$, $p<0.05$, $R^2 = .16$; High-fat foods: $F(5,96)=2.52$, $p<0.05$, $R^2 = .11$). Neither chaos nor intervention significantly predicted Low-fat foods ($ps>.05$), but the interaction between CHAOS and condition was significant ($Beta=.689$, $p=.03$). In WW, greater CHAOS was associated with fewer low-fat foods in the home. In SG, CHAOS did not predict number of low-fat foods in the home. The interaction between CHAOS and condition was not significant in predicting high fat foods, however WW condition was associated with fewer high-fat food in the home ($Beta=-.74$, $p=.02$).

Findings indicate a chaotic home environment in itself is not associated with a poor food environment, but a chaotic environment may make it difficult for those in a weight loss program to improve their food environment. Future research should examine the changes to the home food environment throughout weight loss treatment and the influence of chaos on making changes to the food environment.

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Paper Session 34: Nudging Healthier Food Options 3:45 PM–4:00 PM

DIFFERENCES IN FRUIT AND VEGETABLE INTAKE BETWEEN SCHOOL AND PACKED LUNCHES: THE ROLE OF SCHOOL LUNCH FOOD AVAILABILITY

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Mounting evidence suggests packed lunches brought from home fall short of school-bought lunches in terms of students' fruit and vegetable intake, although findings are mixed. Given that fruit and vegetable availability is positively associated with intake, and that schools are encouraged to offer a wide variety of these foods, higher intake among school lunches may depend on the extent to which greater variety is available at school. The objectives of this study were to (1) compare fruit and vegetable selection and consumption between school and packed lunches and to (2) examine how day-to-day changes in school fruit and vegetable availability influence these differences. Participants were fourth- through sixth-grade students ($N = 315$) from three elementary schools. Each student was observed over a period of 5 consecutive days ($N = 1,421$ lunch observations). Trained analysts estimated food selection and consumption using digital images and written records collected before and after lunch. School fruit and vegetable availability were defined as the total number of offered fruit and vegetable menu items, respectively, each day. Mixed model logistic regressions assessed odds of selecting and consuming fruit and vegetables as a function of lunch type overall (**objective 1**), and after accounting for fruit availability (for fruit outcomes) and vegetable availability (for vegetable outcomes; **objective 2**). Models controlled for student gender, grade, household income, and school. Overall, on days students had packed lunches they were less likely to select fruit (odds ratio [OR], 0.39; 95% CI, 0.17–0.88), consume fruit (OR, 0.29; 95% CI, 0.14–0.57), select vegetables (OR, 0.55; 95% CI, 0.32–0.94), and consume vegetables (OR, 0.44; 95% CI, 0.26–0.77) compared to having school lunches, suggesting these dietary behaviors are better supported when students have school lunches. Aggregating across all observation days, between 1–5 fruit and 3–8 vegetable items were available and availability was positively associated with selection and consumption ($ps < .05$). Importantly, when availability was at its lowest levels (i.e., 1 fruit item, 3 vegetable items), there were no significant differences between school and packed lunches for fruit selection, vegetable selection, or vegetable consumption. Building on prior research comparing packed and school lunches, these findings suggest lunch type differences depend on the school lunch program's food availability on a given day.

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MERITORIOUS AWARD WINNER Paper Session 34: Nudging Healthier Food Options 4:15 PM–4:30 PM

A "DEFAULT OPTION" TO ENHANCE NUTRITION WITHIN A FOOD INSECURE POPULATION

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Introduction: Food insecurity has been associated with an increased risk for obesity. There is a need for sustainable interventions that improve diet-related health within the food insecure community. In behavioral economics, the "default option" is the option a consumer selects if s/he does not make an active choice (e.g., opting out vs. opting in to organ donation programs). We examined if use of a default option would result in the purchase of healthier food items at an online grocery store, compared to psychoeducation.

Methods: 44 participants (age = 45.75 ± 12.83; BMI = 28.59 ± 6.42; 74.4% male) were randomized into two conditions: (1) reading a nutrition "psychoeducational" brochure adapted from current Supplemental Nutrition Assistance Program (SNAP) materials before selecting groceries online with a budget of \$48.50 (typical weekly food stamp allowance) ($n = 21$) or (2) a "default" pre-filled online shopping cart containing a nutritionally balanced selection of groceries selected within the same budget to which they could freely make changes before finalizing their purchase ($n = 23$).

Results: Compared to psychoeducation, the default condition resulted in the purchase of significantly fewer average daily calories ($M = 3581.10$ vs. 2822.31, $p = .02$, $d = .74$), total fat (g) ($M = 182.71$ vs. 101.91, $p < .001$, $d = 1.55$), saturated fat (g) ($M = 59.10$ vs. 30.17, $p < .001$, $d = 1.55$), sodium (mg) ($M = 5113.95$ vs. 3599.17, $p = .002$, $d = .99$), and cholesterol (mg) ($M = 1038.19$ vs. 554.39, $p < .001$, $d = 1.22$), and significantly more average daily fiber (g) ($M = 22.26$ vs. 39.76, $p = .001$, $d = 1.08$) and a greater percentage of the budget allocated towards fruits ($M = 6.3$ vs. 14.43, $p = .02$, $d = .73$) and vegetables ($M = 9.24$ vs. 29.96, $p < .001$, $d = 1.58$).

Discussion: This study suggests that a default approach may help improve food choice behaviors in food insecure individuals with significant financial constraints. Implementation via online platforms could specifically benefit those living in food deserts with limited access to healthy options. As a next step, we plan to conduct a longitudinal, small-scale randomized clinical trial to examine the effect of the default option on actual consumption and diet-related health outcomes.

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CITATION AWARD WINNER
Paper Session 34: Nudging Healthier Food Options
4:30 PM-4:45 PM

FRUIT AND VEGETABLE SELECTION AND INTAKE AFTER INSTALLATION OF SALAD BARS IN TITLE I ELEMENTARY SCHOOLS: A PLATE WASTE STUDY

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School salad bars are increasing in popularity as a means to increase fruit and vegetable (FV) intake within the National School Lunch Program. Salad bars foster choice, which might be particularly effective with the “serve” model, requiring children to take a FV with each meal. However, there is little empirical support for their use. This investigation evaluated the short term impact of salad bars on FV selection, intake and plate waste in two randomly selected, Title I elementary schools in a large, urban district in central Virginia. It also examined student perceptions of salad bars in 15 elementary schools within the district. Digital imagery plate waste assessments were conducted (grades 1–5; >95% African American) before (n=276 plates) and one-month after (n=385 plates) salad bars were installed; 4th and 5th grade students from 15 schools (n=1193) responded to surveys. General linear models examined changes in FV selection, consumption, and % plate waste, controlling for school. Frequencies and qualitative analyses were applied to survey data. Results suggested that students selected more types of FV; however, they selected smaller portions and consumed fewer FV at post, compared to when FVs were pre-portioned. FV plate waste (%) increased; yet relative to portions selected, there was less FV waste (cups) at post. Students liked the ability to choose FV from the salad bar. Results suggest that short term exposure to salad bars increases the number and variety of FV children choose. Additional strategies are needed to increase FV consumption.

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Paper Session 35: Supporting Physical Activity Among Older Adults
3:30 PM-3:45 PM

CROSS-SECTIONAL RELATIONSHIPS OF PHYSICAL ACTIVITY, SLEEP QUALITY, AND COGNITIVE FUNCTION IN OLDER ADULTS

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Background: The growing public health problem of cognitive impairment—and the fact a pharmaceutical cure does not yet exist—places increasing need for lifestyle and behavioural approaches that maintain cognitive health. Current evidence suggests physical activity (PA) and sleep quality are important for cognitive health. However, few studies examining the role of PA and sleep for cognitive health have measured these behaviours objectively. Thus, using cross-sectional data, we examined whether 1) higher PA is associated with better cognitive performance independent of sleep quality; 2) good sleep quality is associated with better cognitive performance independent of PA; and 3) whether higher PA is associated with better sleep quality.

Methods: We measured PA, sleep quality (i.e., fragmentation, efficiency, duration, and latency) and cognitive function (i.e., indexed using the Alzheimer’s Disease Assessment Scale-Plus [ADAS-Cog Plus]) in community-dwelling adults (N=137; aged 55+) using the MotionWatch8®. Using latent variable structural equation modeling, we generated separate models for each sleep quality index (i.e., fragmentation, efficiency, duration, and latency). Each model examined the strength of the relationships of 1) PA with cognitive function, while controlling for sleep quality; 2) sleep quality with cognitive function, while controlling for PA; and 3) PA with sleep quality.

Results: Across all four models, greater PA was associated with better ADAS-Cog Plus performance ($\beta = -0.13$; $p < 0.01$). Greater sleep fragmentation was associated with better cognitive performance ($\beta = -0.11$; $p = 0.03$). However, there were no significant relationships between 1) sleep duration; 2) sleep efficiency; and 3) sleep latency and cognitive performance. We also found higher PA was associated with less sleep efficiency ($\beta = -0.19$; $p = 0.04$), but PA was not significantly associated with any other sleep quality index.

Conclusion: While PA was strongly associated with cognitive performance, the relationship of sleep quality with cognition was less consistent, as only one sleep quality index correlated with cognitive performance. In addition, PA was not strongly related to older adult sleep quality, and thus improving older adult sleep health may require interventional approaches which combine PA with other therapies (i.e., bright light, sleep hygiene, etc.).

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Paper Session 35: Supporting Physical Activity Among Older Adults 3:45 PM–4:00 PM

FEASIBILITY OF AN OUTDOOR MINDFUL WALKING PROGRAM FOR REDUCING NEGATIVE AFFECT IN OLDER ADULTS

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Mindful walking has emerged as a potential intervention strategy to improve mental health and promote well-being in adult and clinical populations. This strategy has not been implemented with older adults to date. This study evaluated the feasibility, acceptability, sustainability, and preliminary efficacy of a mindful walking program for reducing negative affect in older adults. Community-dwelling older adults ($n = 29$) completed a one-month, outdoor mindful walking program distributed across eight 30-minute sessions. Overall, 93% of the recruited participants ($n = 27$) completed all walking sessions and assessments. Responses from the post-program and the followup questionnaires revealed that mindful walking was well-accepted, highly-valued, and maintained after the program ended. Open-ended feedback reinforced these findings. Analysis from the pre-walk and post-walk surveys also suggested the preliminary efficacy of mindful walking program for reducing negative affect. In general, the mindful walking program in the current study can be implemented as intended (i.e., feasible) and should be considered acceptable and sustainable by older adults. Positive results identified in the current feasibility study indicate readiness for randomized controlled trials to further examine the efficacy and effectiveness of a mindful walking intervention for promoting health and well-being in older populations.

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Paper Session 35: Supporting Physical Activity Among Older Adults 4:00 PM–4:15 PM

FACTORS ASSOCIATED WITH ADHERENCE TO ACTIVITY MONITOR-BASED PHYSICAL ACTIVITY INTERVENTION IN OLDER ADULTS

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Purpose: Wearable activity monitors are a promising supplemental tool for increasing physical activity (PA) among older adults, for whom regular PA may help maintain independent living ability and delay development of mobility disability. However, factors that may promote adherence to mhealth interventions (use of activity monitor in addition to counseling calls) are not well understood. We thus examined adherence to a mhealth intervention and identified factors that may be associated with weekly adherence to a 12-week activity monitor-based PA intervention in older adults.

Methods: We conducted a secondary analysis using data from 35 participants (older adults aged 55–79) who completed the intervention. Weekly adherence was defined as the participant wore the Jawbone Up24 wearable activity monitor for ≥ 5 days and completed the weekly phone call to review the previous week's step goal. Variables of interest included: age, gender, race/ethnicity, body mass index (BMI), gave and received virtual support, previous week's step average, achieved step goals, barrier and task self-efficacy, and self-comments. Associations of variables to adherence were examined by generalized linear mixed models.

Results: Participants (61.7 ± 5.7 years, 57% Non-Hispanic White, 83% female, and BMI 30.2 ± 3.34 kg/m²) showed an adherence rate at week 1 of 86%, decreasing to 74% by week 12. Achieved the previous week's goal ($\beta=1.13$, SE=0.41, $p \beta=0.01$, SE=0.004, $p=0.02$) were significantly associated with adherence. Age, gender, race/ethnicity, BMI, gave virtual support, previous weeks' step average, barrier and task self-efficacy, and self-comments were not significantly associated with adherence.

Conclusions: Our results suggest that achieved step goals and received virtual support were important factors to improve adherence to an activity monitor-based PA intervention among older adults. Future interventions may consider setting smaller achievable goals and promoting virtual interactions on the activity monitor applications to encourage long-term PA adherence in older adults.

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Paper Session 35: Supporting Physical Activity Among Older Adults 4:15 PM–4:30 PM

DAY-TO-DAY CHANGES IN PHYSICAL ACTIVITY AND SLEEP QUALITY IN OLDER ADULTS: A MULTI-LEVEL ANALYSIS OF BIDIRECTIONAL CONNECTIONS

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BACKGROUND: Maintaining sleep quality and physical activity (PA) have been shown to be important to various aspects of healthy aging. These two behaviours appear to be interrelated, and thus, by promoting one behaviour, it may be possible to improve the other. Examination of within-person day-to-day fluctuations in these behaviours is necessary to better understand the directionality of their association.

METHODS: One hundred fifty-two older adults (mean age = 71 years, SD = 7 years; 67% female) from the community were asked to wear a uni-axial, wrist-worn accelerometer (MotionWatch 8) over 14 days. Three measures of sleep quality were quantified: 1) *fragmentation index*; 2) *sleep efficiency* (time asleep expressed as a percentage of time in bed); and 3) *sleep duration*. Percent of day in PA (>3.0 METS) was assessed. Dynamic structural equation modeling (DSEM) with Bayesian estimation estimated within-subject autoregressive effects (e.g., the person-centered effect of the preceding day's sleep quality on the next day sleep quality), within-subject cross-lagged effects (e.g., the person-centered effect of the preceding day's PA on that night's sleep quality), and between-subject associations between sleep quality and PA. A separate DSEM was constructed for each sleep quality measure. Age, sex, and education were included as between-subject covariates.

RESULTS: Across the 152 participants, 1988 observations of each measure of sleep quality and 1964 observations of PA were collected over the 2-week observation period. In each DSEM, there was a positive autoregressive effect of PA (estimate = .19, 95% CI: .14, .24), suggesting that when an individual engaged in a high amount of PA on one day (relative to her average), she was slightly more likely to engage in a high amount of PA on the next day. In contrast, there was a negative autoregressive effect of sleep duration (estimate = -.09, 95% CI: -.13, -.04), suggesting that nights in which she slept for a long period of time were followed by nights in which she slept relative less than her average. One cross-lagged effect was observed between PA and that night's sleep duration (estimate = .01, 95% CI: .001, .02), which suggests that when an individual engaged in a large amount of PA, she tended to sleep longer that following night. One between-subject correlation was observed between PA and sleep efficiency (estimate = -6.93, 95% CI: -13.88, -.57), suggesting that participants who engaged in large amounts of PA (relative to the sample averaged across all days) tended to have lower sleep efficiency.

CONCLUSIONS: The current study provides evidence that engaging in large amounts of PA might lead to longer sleep duration that night. No measure of sleep quality predicted subsequent engagement in PA. Increasing PA therefore might increase sleep duration in older adults.

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Paper Session 35: Supporting Physical Activity Among Older Adults 4:30 PM-4:45 PM

THE ROLE OF MHEALTH IN A TAILORED SELF-MANAGEMENT INTERVENTION TO PROMOTE ADHERENCE TO AN EXERCISE PROGRAM FOR OLDER ADULTS

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Background: Little is known about how mHealth supported individually tailored self-management interventions (mHealth-ITSMIs) might promote exercise adherence among people living with chronic conditions that impede physical function.

Objective: To generate a contextually rich theory driven assessment of exercise adherence promotion via a mHealth-ITSMI designed specifically for older adults (age 50+) diagnosed with osteoarthritis of the knee and hypertension. The primary research questions are: 1) What is the relationship between extent of tailoring and patterns of adherence over the course of the 24-week intervention period, and 2) What role might mHealth play in tailoring and adherence?

Methods: Quantitative and qualitative data from the intervention arm of the Staying Active with Arthritis (STAR) trial were utilized. Latent trajectories of tailoring and adherence for lower extremity exercise (LEE) and fitness walking (FW) were identified using group based trajectory modeling. Bivariate associations between identified tailoring and adherence trajectory groups were evaluated. Purposive sampling was performed based on adherence and tailoring trajectory group membership. Actor Network Theory guided the descriptive analysis of transcribed audio-recorded participant-physical therapist interactions to examine the role the eDiary played in exercise tailoring and adherence.

Results: Group-based trajectory modeling revealed three distinct trajectories for LEE adherence and tailoring; four for FW adherence and tailoring. A moderate association was observed between LEE and FW adherence trajectories ($p=.001$), and between LEE tailoring and adherence trajectories ($p=.007$), but not between FW tailoring and adherence trajectories ($p=.12$). The eDiary played a role in the participant-interventionist relationship, decision-making, and motivation. Motivation was explained by concepts from social cognitive theory, self-determination theory, and goal-setting theory. The degree of individual fit between how a goal was defined and the way it was measured via the eDiary impacted participants' perceived accomplishment and directly impacted sustained motivation.

Conclusions: mHealth-ITSMIs could further encourage the initiation and maintenance of an exercise routine by offering more individually tailored options for defining goals and measuring achievement. Design consideration include the ability to adjust for changes in health status, physical ability, and life events, and by promoting a personalized balance between extrinsic and intrinsic motivators. Further evaluation of mHealth-ITSMIs should include time-variant measures (both behavioral and physical) that may explain mechanism of effects in the analysis of goal tailoring and adherence at multiple time points over the course of the initial intervention and maintenance phases.

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MERITORIOUS AWARD WINNER Paper Session 36: Context Matters: Advancing Understanding of the Link Between the Built Environment, Physical Activity, and Health 3:30 PM-3:45 PM

WALKABILITY MODERATES INTERVENTION ON MODERATE-TO-VIGOROUS PHYSICAL ACTIVITY AND BODY MASS INDEX

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Physical inactivity raises the risk of premature morbidity and mortality. The built environment (BE) is consistently linked to physical activity (e.g. walking), yet few studies have examined whether the BE moderates individual-level physical activity interventions. The current study explores how neighborhood walkability moderates change in body mass index (BMI), moderate-to-vigorous physical activity (MVPA), steps per day (Step/d), cardiorespiratory fitness (CRF), and blood pressure (BP) for participants in a 4-month 2x2 factorial RCT using mobile health (mHealth) technology (e.g. accelerometers and text messages) in adults (i.e. the WalkIT Trial).

Methods: Participants received a randomly assigned mHealth intervention designed to increase Steps/d: Adaptive vs. Static Goals and Immediate vs. Delayed Rewards. Pre- and post-BMI, MVPA, Step/d, CRF, BP were measured. GIS defined 500-m and 1-km street-network buffers (neighborhoods) around participant homes and derived walkability scores (residential, intersection, and transit density; land use mix). Analyses included separate linear step-wise regression of change in BMI, MVPA, Step/d, CRF, and BP on walkability for each buffer size; alpha level=0.15 to explore contextual interactions. Covariates included age, sex, race, smoking status, and baseline value of dependent variable.

Results: Participants ($n = 75$) were 77% female, mean age = 42.3 years. For change in BMI and MVPA, the walkability index significantly moderated group assignment for the 500-m buffer size (BMI: $B = .236$, $p = .03$; MVPA: $B = 0.98$ $p = .13$), but was not significant for Step/d, CRF, or BP. The 1-km buffer detected no significant moderation for any outcome. To probe the interactions, the change in BMI and MVPA by intervention group (Goal x Reward) was explored at high and low walkability (± 1 to 3 standard deviations). For BMI: living in higher walkable neighborhoods, participants receiving Static Goals with Immediate Rewards showed the greatest reduction in BMI compared to the other intervention groups. For lower walkable areas, receiving Adaptive Goals with Immediate Rewards showed the greatest reductions in BMI. For MVPA: living in higher walkable neighborhoods, those receiving Adaptive Goals with Delayed Rewards showed the smallest increase in MVPA compared to the other intervention groups. In lower walkable areas, the Static Goals with Delayed Rewards group showed the smallest increase in MVPA. Across walkability scores, the gain in MVPA was stable for both groups receiving the Immediate Rewards.

Conclusions: Walkability differentially moderated intervention effects on BMI and MVPA. Determining types of interventions best suited for specific forms of BE may improve individual response and better change health outcomes.

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MERITORIOUS AWARD WINNER
Paper Session 36: Context Matters:
Advancing Understanding of the Link
Between the Built Environment, Physical
Activity, and Health 3:45 PM-4:00 PM

OBEISITY AND RACIAL DISPARITIES: EXPLORING SPATIAL DISTRIBUTION BASED ON SOCIOECONOMIC DEPRIVATION

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Rates of overweight and obesity in the U.S. have increased among people of all racial groups and some are disproportionately affected. However, there is scarce information on how spatial distribution of the socioeconomic status (SES) disparities may influence racial differences. This study examined the relationship between the spatial distribution of study participants in a technology-enhanced weight loss program, socioeconomic vulnerability (characterized by the Area Deprivation Index/ ADI), weight status (BMI), and race in the city and county of Roanoke, Virginia. ADI represents a composite geographic area-based measure of the socioeconomic deprivation experienced by neighborhood. The higher the value of ADI, the higher is the socioeconomic deprivation of the respective block group and these high levels of deprivation have been associated with an increased risk of adverse health and health care outcomes. The prevalence of socioeconomic vulnerability characterized by the ADI was mapped by block group in ArcMap by creating a choropleth map of block group ADI using quartiles as a method of classification. Geographical analyses included the use of three spatial statistics to determine spatial clustering (global Moran's I and Getis-Ord G*). Global Moran's I test revealed statistically significant ($p < 0.001$) clustering of both BMI (Moran's I: 0.02; z-score=3.71) and race (Moran's Index: 0.03; z-score=5.46). Hot Spot analysis by means of the Getis-Ord Gi* statistic, where hot spot was defined as a clustering of high ADI while a cold spot represented the clustering of low ADI, revealed significant hot spots (99% confidence) corresponding with the spatial distribution of African American (AA) participants and no associations for Caucasians. These findings show the existence of clusters with significantly higher rates ('hot spots') of social economic deprivation associated with a participant's BMI and race. In particular, AA were more likely to live in areas of greater socioeconomic vulnerability and present higher BMI. These results suggest that racial differences in obesity risk may be influenced by socioeconomic vulnerability and show the importance to consider social environmental determinants to better understand obesity related racial disparities.

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CITATION AWARD WINNER
Paper Session 36: Context Matters:
Advancing Understanding of the Link
Between the Built Environment, Physical
Activity, and Health 4:00 PM-4:15 PM

I SAW THE SIGN (AND MIRROR): EFFECTS OF MIRROR EXPOSURE AND PROMOTIONAL SIGNAGE ON STAIR VS. ELEVATOR USE IN COLLEGE STUDENTS

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Objective Self-Awareness (OSA) theory (Duval & Wicklund, 1972) proposes that heightened focus on the self will lead individuals to align their behavior with a personally- or socially-derived standard. Exposure to a mirror may increase self-awareness and has previously been found to induce behaviors that align with a known or implied standard, such as honesty and helping behavior. However, very little research has investigated the influence of mirror exposure on physically active behaviors, which are commonly valued. The present research examined the effects of mirror exposure on the health behavior of stair vs. elevator use, hypothesizing that individuals exposed to a mirror and a stair-promotional sign would have higher odds of taking the stairs than those exposed to a sign only and that descriptive norm messaging on promotional signage would be associated with higher odds of stair use than health-based messaging. University students ($n = 204$) were exposed to either a body-length mirror and a point-of-decision sign promoting stair use (with either a descriptive norm or health-based message), a descriptive norm or health-based promotional sign only, or nothing and were then observed as they chose to take the stairs or elevator to the fourth floor of an enclosed campus parking garage. Participants were also surveyed post-transportation decision on demographic information and their health behaviors including physical activity. Results partially supported hypotheses by indicating that participants' odds of stair use were increased above baseline after exposure to a body-length mirror with a health sign describing caloric expenditure during stair use (OR = 2.99, $p = 0.06$, 95% CI [0.96, 9.31]) and after exposure to a descriptive norm sign on its own (i.e., without a mirror) describing the high stair use of university students (OR = 3.63, $p = 0.02$, 95% CI [1.21, 10.94]). Such findings do not directly support OSA theory but suggest inexpensive new methods for promoting stair use among college students with mirrors and specific messages on point-of-decision signage.

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Paper Session 36: Context Matters: Advancing Understanding of the Link Between the Built Environment, Physical Activity, and Health 4:15 PM-4:30 PM

AMAZON MTURKERS VS EXPERT RATERS: CROWDSOURCING MICROSCALE AUDITS OF PEDESTRIAN STREETSCAPES

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Expert virtual audits of neighborhood streetscape features are a reliable alternative to in-person audits. Major obstacles associated with the scalability of virtual audits are their time-intensive nature and the expertise needed. Internet crowdsourcing combined with Google StreetView offers the potential to virtually audit environments by enlisting large numbers of laypersons, thereby addressing the time intensity of scalability. This pilot study tested the concordance between minimally-trained Amazon MTurk (i.e., an online workforce) workers and expert raters of streetscape features with an online version of Microscale Audits of Pedestrian Streetscapes Mini (MAPS-Mini).

Methods: Participants (N=22) were selected from high and low walkable and socioeconomic status neighborhoods in Phoenix, AZ. GIS was used to identify audit points every 25 meters originating from the home and extending out along the street network in all directions up to 400m (n=540 audit points). We developed a dynamic interface to allow 5 experts and 653 MTurk raters to panoramically view and audit each point via Google StreetView for 7 MAPS-Mini features. Intraclass correlation coefficients tested the average scores of 3 MTurk ratings to an expert rating. Majority rule was used (e.g. if 2 of 3 MTurk ratings were positive for a feature, then it was presumed to exist) for each audit point to evaluate sensitivity and specificity relative to experts.

Results: Expert raters found the following prevalences: sidewalks (95%), bike lanes (17%), parks (16%), sidewalk buffers (10%), public seating (8%), transit stops (4%), and graffiti (3%). Compared to expert raters, MTurk ratings for bike lanes (.83), sidewalk buffers (.70), and transit stops (.73) showed substantial concordance. Benches (.54), sidewalks (.59) and parks (.53) showed moderate concordance and graffiti had poor concordance (.08). Further analyses revealed that MTurkers were sensitive to the presence of all features, yet were inaccurate for sidewalk absence. After accounting for prevalence, positive predictive values were in the acceptable range (i.e. >.70) for all items, except graffiti.

Conclusions: Crowdsourced audits of microscale features showed substantial to moderate concordance with experts. Additional testing across diverse neighborhoods and populations is necessary. Next steps for enhancing a crowdsourced MAPS Mini tool will be discussed along with the promise of scaling up microscale audits.

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Paper Session 36: Context Matters: Advancing Understanding of the Link Between the Built Environment, Physical Activity, and Health 4:30 PM-4:45 PM

INFLUENCE OF THE BUILT ENVIRONMENT ON QUALITY OF LIFE IN EARLY-STAGE AFRICAN AMERICAN BREAST CANCER PATIENTS.

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Living in disadvantaged neighborhoods may adversely affect breast cancer patients' quality of life (QOL) through various stressors. We examined the extent to which the built environment affected QOL in African American breast cancer patients. We prospectively recruited 227 newly diagnosed African American breast cancer patients (stage 0-III, age 30+) between 12/2009 and 12/2012 from the St. Louis area. Patients completed 5 interviews over 2-year follow-up. Patient-reported QOL was measured using the 8 subscales of the RAND Medical Outcomes Study 36-Item Health Survey. Geocoded residential addresses allowed us to virtually audit the built environment of their streets using Google Street View and the Active Neighborhood Checklist, which assesses land-use characteristics, sidewalk quality (e.g., obstructions, cracks), and physical disorder (graffiti, vacant building/lots). Latent trajectory models allowed for differentiation between systematic change in QOL over time (slope) and stable tendencies of a baseline level of QOL (intercept). Covariates included patient sociodemographics, comorbidity, and smoking status. QOL scores improved over time for emotional wellbeing, role limitations due to emotional problems and due to physical health, energy/fatigue, and social functioning (p<0.05). General health and physical functioning declined over time (p<0.05). Pain was the only subscale that did not change significantly. Women who lived on streets with higher sidewalk quality reported better emotional wellbeing and social functioning, and fewer limitations due to emotional problems at baseline in adjusted analysis (all p<0.05), but these QOL measures did not improve more rapidly over time than women with lower sidewalk quality (all p>0.05). Women who lived on streets with abandoned homes/vacant lots reported more limitations due to emotional problems at baseline but this did not affect their improvement over time. Women who lived on streets with graffiti, litter, or broken/boarded windows had a slower rate of improvement in role limitations due to emotional problems over time (p<0.05). None of the built environment conditions affected other aspects of QOL. In sum, key aspects of the built environment affected baseline emotional wellbeing and social functioning and improvement in role limitations due to emotional problems. QOL interventions should focus on African-American breast cancer patients who live on streets with graffiti, litter, or broken/boarded windows.

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Paper Session 37: Advancing Policies and Practices in Cigarette Risk Messaging
3:30 PM-3:45 PM

NEGATIVE AFFECT, MESSAGE REACTANCE, AND RISK PERCEPTIONS: HOW DO PICTORIAL CIGARETTE PACK WARNINGS CHANGE QUIT INTENTIONS?

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Objective. It is currently unclear what psychological mechanisms underlie the robust finding that pictorial warnings on cigarette packs increase motivation to quit smoking. Thus, we sought to examine the potential mediating role of negative affect, message reactance (i.e., an oppositional reaction to a message), and risk perceptions in shaping quit intentions.

Methods. In 2014 and 2015, we randomly assigned 2,149 adult US smokers to receive either pictorial warnings or text-only warnings applied to their cigarette packs for four weeks. Longitudinal analyses used structural equation modeling with bootstrapped standard errors to test our theorized multiple mediation model.

Findings. Pictorial warnings increased negative affect, message reactance, and quit intentions (all $p < .001$), but not perceived likelihood of harms from smoking. Negative affect mediated the impact of pictorial warnings on quit intentions (mediated effect = .16, $p < .001$). Message reactance weakened the impact of pictorial warnings on quit intentions, although the effect was small (mediated effect = -.04, $p < .001$). Although pictorial warnings did not directly influence perceived likelihood, the model showed additional small mediation effects through negative affect and its *positive* association with perceived likelihood (mediated effect = .02, $p < .05$), as well as reactance and its *negative* association with perceived likelihood (mediated effect = -.01, $p < .05$).

Conclusions. Pictorial cigarette pack warnings increased quit intentions by increasing negative affect. Message reactance partially attenuated this increase in intentions. The offsetting associations of negative affect and reactance on risk perceptions may explain why pictorial warnings did not lead to observable changes in risk perceptions.

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Paper Session 37: Advancing Policies and Practices in Cigarette Risk Messaging
3:45 PM-4:00 PM

WHY DO SMOKERS AVOID RISK MESSAGES? RESULTS FROM TWO RANDOMIZED CONTROLLED TRIALS

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Background. Avoidance of risk messages is associated with them being more effective, but the mechanism is not well understood. We hypothesize that message avoidance may be due to fear (which will motivate behavior change) or reactance (which will undermine behavior change). We investigated these two understudied hypotheses in two randomized trials.

Methods. Trial 1 randomly assigned 2,149 adult US smokers to receive either pictorial warnings (intervention) or text-only warnings (control) on their cigarette packs for four weeks in 2014 and 2015. Trial 2 randomly assigned 719 adult US smokers to receive either messages about chemicals in cigarette smoke and their health harms (intervention) or messages about not littering cigarette butts for three weeks (control) in 2016 and 2017. Multiple mediation analyses used structural equation modeling. We report mediated effects as standardized path coefficients.

Results. Stronger risk messages led to greater message avoidance in both trials (both, $p < .001$). Negative affect, including fear, explained most of the greater message avoidance in Trial 1 (mediated effect = .21, $p < .001$). In contrast, reactance explained only a small part of the effect in Trial 1 (mediated effect = .03, $p < .001$). Similarly, in Trial 2, negative affect explained the effect of stronger risk messages on message avoidance (mediated effect = .13, $p < .001$). Reactance explained none of the effect.

Conclusions. In two large trials, smokers avoided messages due to fear and other negative affect, but reactance had little impact. This pattern of findings may explain prior research demonstrating that message avoidance is associated with stopping smoking.

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Paper Session 37: Advancing Policies and Practices in Cigarette Risk Messaging 4:00 PM–4:15 PM

IMPACT OF CIGARETTE PACK DISCLOSURES ABOUT TOXIC CHEMICALS: A RANDOMIZED CLINICAL TRIAL

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Background: Federal law requires public disclosure of information about harmful and potentially harmful chemicals in cigarette smoke, but the impact of these disclosures is uncertain. We sought to assess the impact of putting disclosures about toxic chemicals on smokers' cigarette packs.

Methods: We enrolled a convenience sample of 719 adult cigarette smokers in California, US from September 2016 through March 2017. We placed informational messages on the right side of smokers' cigarette packs for three weeks, a different label each week. We randomly assigned smokers to receive either messages about chemicals in cigarette smoke and their health harms (intervention arm) or messages about not littering cigarette butts (control arm). The labels in the two arms were matched for size, color and word length. The primary trial outcome was intentions to quit smoking in the next month, assessed at the end of the three-week intervention. These results are preliminary until publication of final paper. ClinicalTrials.gov identifier: NCT02785484.

Results: Of 719 smokers randomized to a trial arm, 704 completed the trial. Smokers in the trial were diverse, including a substantial number of African American, sexual minority, low-education, and low-income smokers. In intent-to-treat analyses ($n=719$), smokers whose packs had chemical disclosures did not have higher intentions to quit smoking at the end of the trial than those whose packs had a control message (mean [SD] intentions 2.6 [1.0] vs. 2.6 [1.1], $p = .56$). Compared to the control messages, disclosures led to greater awareness of the chemicals (28% vs. 15%, $p < .01$) and health harms (60% vs. 52%, $p = .02$) that were in the disclosure messages. The trial arms did not differ with respect to awareness of the chemicals and health harms not in the disclosure messages. Chemical disclosures led to greater negative affect, thinking about the chemicals in cigarettes and the harms of smoking, conversations about the disclosures, and foregoing a cigarette (all $p < .05$).

Conclusions: Chemical disclosures on cigarette packs did not lead to greater intentions to quit smoking. Our trial findings suggest that implementing chemical disclosures on cigarette packs in the United States would inform smokers but may not lead to a population-wide reduction in smoking.

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Paper Session 37: Advancing Policies and Practices in Cigarette Risk Messaging 4:15 PM–4:30 PM

HOW CONVERSATIONS ABOUT PICTORIAL CIGARETTE PACK WARNINGS IMPACT QUIT ATTEMPTS: A MULTIPLE MEDIATIONAL ANALYSIS

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Background: In the US, cigarette smoking is responsible for 1 in 5 deaths annually. Pictorial warnings on cigarette packs elicit more quit attempts than text-only warnings. Conversations people have about the warnings may mediate this relationship.

Purpose: We sought to establish whether conversations mediate the relationship between exposure to pictorial warnings and quit attempts, and, importantly, to understand whether and how the theoretical mechanisms of cognitive elaboration, injunctive norms, and recall may be influencing quit attempts.

Methods: US adult smokers ($n=2,149$) participated in a controlled trial that randomly assigned them to have their cigarette packs labeled with pictorial or text-only warnings for four weeks. Surveys assessed the number of conversations sparked by pictorial warnings, theoretical mechanisms, and conversational content at each visit. Analyses used structural equation modeling to test our theorized mediational model.

Results: The number of conversations about the warnings mediated the positive relationship between exposure to pictorial warnings and quit attempts ($p < .001$). In serial mediation analysis examining possible theoretical mechanisms, the number of conversations was associated with greater cognitive elaboration, which in turn was associated with more quit attempts ($p < .05$). Examining the role of conversation content showed that conversations about negative emotional reactions to the warnings mediated the path from warnings to quit attempts ($p < .05$), while conversations about other topics did not.

Conclusions: Conversations about pictorial warnings are one way that pictorial warnings influence quit attempts, and these results indicate that cognitive elaboration is a possible theoretical mechanism that explains why. Furthermore, what people say during their conversations about the warnings matters; conversations about negative emotional reactions to the warnings influence quit attempts while other topics do not. These results support designing warnings that increase conversations about the warnings.

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Paper Session 37: Advancing Policies and Practices in Cigarette Risk Messaging 4:30 PM-4:45 PM

MESSAGE CHARACTERISTICS AND DEMOGRAPHIC PREDICTORS OF CONVERSATIONAL TRAJECTORIES ABOUT PICTORIAL CIGARETTE PACK WARNINGS

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Background: In the US, cigarette smoking is responsible for 1 in 5 deaths annually. Pictorial warnings on cigarette packs elicit more quit attempts than text-only warnings. Conversations about pictorial warnings are one of the ways warnings exert their influence on quit attempts, but the number of conversations often decrease over time. We sought to identify covariates that predicted the trajectories of conversation frequency over time.

Methods: We analyzed data from the intervention group of 1,071 US adult smokers who we randomly assigned to have their cigarette packs labeled with pictorial warnings for four weeks. They completed surveys about demographic characteristics, conversation frequency, and reactions to the pictorial warnings during the baseline visit and at each of the subsequent four weekly visits. We analyzed the data using latent growth curve modeling.

Results: During the first week of having pictorial warnings on cigarette packs, older smokers had fewer conversations than younger smokers. Conversations during the first week were also more common among smokers who were white, low-income, had greater perceived message effectiveness of the warning, and had stronger negative emotional reactions to the warnings (all $p < .05$). Conversations declined during the second week, but these declines were more gradual for minority and older smokers, leading to more conversations throughout the study.

Conclusions: Conversations about cigarette pack warnings decreased over time. Greater perceived message effectiveness of the warnings and stronger negative emotional reactions to the warnings were associated with more conversations during the first week of smoking from packs with pictorial warnings. We should design pictorial warnings that elicit strong negative emotions and high levels of perceived effectiveness in order to spark conversations.

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Paper Session 38: Progress in Culturally Appropriate Care and Interventions to Address Health Disparities 3:30 PM-3:45 PM

THE BENEFITS OF A CULTURALLY SENSITIVE BRIEF EXPRESSIVE WRITING INTERVENTION AMONG CHINESE AMERICAN BREAST CANCER SURVIVORS

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Background: Research has demonstrated that expressive writing interventions confer physical health benefits for Caucasian cancer survivors. However, few studies reported improved quality of life (QOL) or recruited ethnic minorities.

Purpose: The study aims to evaluate the impact of an expressive writing intervention on quality of life (QOL) among Chinese American breast cancer survivors.

Methods: One hundred and thirty-six Chinese-speaking breast cancer survivors in the U.S. were randomly assigned to one of three writing conditions: a self-regulation condition (SRC), an enhanced self-regulation condition (ESRC), or a cancer-fact condition (CFC) to write three 30-minute weekly essays. The CFC wrote about facts relevant to their cancer experience. The SRC and ESRC differed in the sequence of writing instructions. The SRC wrote about one's deepest feelings at week 1 and stress and coping at week 2. The ESRC wrote about stress and coping at week 1 and deepest feelings at week 2. Both conditions wrote about finding benefits at week 3. QOL was assessed by Functional Assessment of Cancer Therapy (FACT) at baseline, 1-, 3-, and 6-month follow-ups. Effect sizes and growth curve models were used to compare group differences in QOL.

Results: All three conditions increased QOL and the ESRC had the greatest increase from baseline to the 6-month follow-up ($b = 6.47$, 95% CI 1.56: 11.38; $d = .90$, 95% CI .02: 1.687). The ESRC had a statistically higher increase in QOL compared to the cancer fact control condition.

Conclusion: Expressive writing is shown to be an effective intervention to improve QOL for Chinese American cancer survivors. Future efforts are warranted to disseminate and implement this low-dose and brief intervention in community and clinical settings.

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Paper Session 38: Progress in Culturally Appropriate Care and Interventions to Address Health Disparities

3:45 PM–4:00 PM

VIDA PURA: RESULTS FROM A PILOT RANDOMIZED TRIAL TO REDUCE UNHEALTHY ALCOHOL USE AMONG LATINO DAY LABORERS

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Background: Vida PURA is a culturally adapted intervention that consists of promotores providing screening and brief intervention at a day labor worker center to reduce unhealthy alcohol use among Latino day laborers.

Methods: We conducted a pilot randomized control trial to test the efficacy of the Vida PURA intervention. Participants were screened for eligibility using the AUDIT (n = 181). Those with an AUDIT score ≥ 6 completed a baseline survey (n = 121) and were randomized into an intervention (n = 71) or control group (n = 30). Participants in the intervention group received a brief intervention from a promotor at a day labor worker center. Personalized feedback was provided by promotores, using a tablet screen to display the participants' quantity of daily and weekly drinking. Promotores also used motivational interviewing to discuss the feedback and participants' goals related to reducing their drinking. We conducted follow-up surveys at eight weeks following the baseline to assess changes in AUDIT scores, daily and weekly drinking.

Results: At baseline, mean AUDIT scores were 19.1 for men in the intervention group (n = 71) and 21.5 for those in the control group (n = 30). Both groups had decreased their AUDIT scores at eight weeks (intervention, 15.6; control, 18.2) with no significant differences between groups. Both groups also decreased their average number of drinks per drinking day from baseline to eight weeks (intervention, 2.9 to 1.8; control, 4.5 to 3.8, $p < .05$). Number of drinking days in the past two weeks also decreased in both groups from baseline to eight weeks (intervention, 5.7 to 4.2; control, 7.1 to 6.5, $p < .05$).

Conclusions: Given that there were no significant differences across groups, results may have been due to an assessment effect (promotores discussing alcohol use during the survey) or changes in the social environment at the worker center that led to changes in drinking behaviors among control group participants. Future research should further evaluate culturally appropriate interventions for reducing unhealthy alcohol use in this population.

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Paper Session 38: Progress in Culturally Appropriate Care and Interventions to Address Health Disparities

4:00 PM–4:15 PM

BORDER STUDENTS ARE SUN SAFE: SKIN CANCER PREVENTION EDUCATION FOR HISPANIC ADOLESCENTS ATTENDING RURAL, BORDER HIGH SCHOOLS

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Background: Skin cancer, the most common cancer in the US, is caused by overexposure to ultraviolet radiation (UVR). Most people living near the U.S.-Mexico border are Hispanic; skin cancer incidence is rising in Hispanics. Youth are prone to UVR overexposure; few skin cancer prevention programs target rural and underserved youth. Project Students are Sun Safe (SASS) has been implemented successfully in urban middle and high schools. Trained university health sciences students (peer leaders) teach a brief SASS PowerPoint lesson that covers skin structure, skin cancer, UVR and UVR protection. The lesson is reinforced by three interactive activities (sun protective fabric, sunscreen ingredients, skin analyzer). A limitation of the model is that university students cannot travel long distances to rural schools to present SASS. Using a CBPR framework, university and community partners adapted the SASS lesson activities for dissemination to underserved rural high schools.

Purpose: To determine the feasibility of implementing Border SASS in classrooms and evaluate the main outcomes of skin cancer knowledge, beliefs, and risk-reducing behaviors in students.

Methods: The partnership team adapted the SASS classroom lesson, considering age level and cultural appropriateness. The team reduced the lesson delivery time to 40 minutes to allow for assessments during a high school class period. Trained high school peer educators (n = 18) delivered (in groups of 3) the Border SASS lesson to 220 classroom students over 4 months. The 17-item pretest and immediate posttest assessed demographics and risk factors along with main outcomes. Students completed the second posttest four months later.

Results: Evaluable cases were students who completed all 3 tests (n = 198 students; 90% response rate). Main outcomes increased significantly from pretest to posttests 1 and 2. The overall correct score on knowledge items increased from 40.61% (SD, 20.8) to 53.33% (SD, 22.62) ($p < .001$). Number of sun protective behaviors increased from mean = 2.45 (SD, 1.33) behaviors to mean = 3.58 (SD, 1.33) behaviors ($p < .001$). On pretest 124 (62.6%) participants thought it was definitely important to examine their own skin, increasing to 179 (90.4%) on posttest 2 ($p < .001$). Students were highly satisfied with Border SASS.

Conclusions: Border SASS was successfully implemented in underserved Hispanic adolescents by using a CBPR approach. Participants sustained skin cancer risk-reducing behavior for 4 months. Knowledge improved but remained low, suggesting the need for potential boosters and continued dissemination in rural high schools.

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Paper Session 38: Progress in Culturally Appropriate Care and Interventions to Address Health Disparities

4:15 PM-4:30 PM

A QUALITATIVE EXAMINATION OF ATTITUDES TOWARD RETURN OF GENETIC RESEARCH RESULTS AMONG AFRICAN AND LATINO/HISPANIC AMERICANS

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Genomic research generates results with implications for individual participants and their relatives. Studies addressing return of genetic research results to participants have focused on people of European descent, as they comprise a majority of participants in genetic research. Calls for racial and ethnic diversity in genomic research (including the Precision Medicine Initiative/All of Us Research Program) necessitate a greater understanding of knowledge, attitudes, and preferences among minorities. Six focus groups (3 with African American (AA) and 3 with Latino/Hispanic American (L) adults) were held in Spring 2017 in Duval County, FL (N=45; 78% female; M age=50 ± 18y). Groups were conducted in English or Spanish, audio-recorded, transcribed, translated into English, and verified. Transcripts were analyzed using thematic analysis; coding was informed by the Information-Motivation-Behavior model. A majority of AA and L participants favored the idea of receiving genetic research results because information was viewed as beneficial for self-care or disease prevention, yet, this was only the case if results were actionable or conclusive: “If there is no remedy, don’t tell me” (L); “If you don’t have enough information to give me, don’t give me anything” (AA). Participants generally said they would share genetic findings with relatives: “seria egoista no compartirla” -it’d be selfish not to share it (L) and that they would allow sharing with family members after their death: “... that would be a part of me still being alive to my family” (AA); “I would want mine shared...I mean I’m dead and gone...” (AA) However, participants preferred control over those decisions; they acknowledged the benefits of sharing information that would be helpful to blood relatives, but there was also concern that genetic information could create the potential for worry and negatively affect family members who were not prepared to handle the information. Some family members were considered more apt to manage genetic information than others. Common across groups was the desire for a questionnaire to outline participant preferences, including how results would be shared with the participant, with family members after participant death, and who would do so (researcher, physician). By extending its reach to genomic research initiatives, behavioral science can contribute to the evidence base regarding preferences and outcomes of return of genetic research results and influence emerging policy and practice.

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Paper Session 38: Progress in Culturally Appropriate Care and Interventions to Address Health Disparities

4:30 PM-4:45 PM

ETHNIC DIFFERENCES IN ARIZONA HOSPITAL UTILIZATION TRENDS: POPULATION-LEVEL EVIDENCE FOR A BROADER HISPANIC HEALTH PARADOX

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Background. Despite a significantly worse risk factor profile, Hispanics experience lower incidence of most diseases and live longer than non-Hispanic Whites (NHWs). This epidemiological phenomenon commonly referred to as the Hispanic mortality paradox is robust, replicated, and characterized by relatively large effects. An important question is whether this ethnic advantage in longevity reflects a broader health advantage. The current aim was to examine whether Hispanics experience a broader health advantage by examining state-level hospital utilization.

Method. Inpatient hospital utilization rates per 1,000 and confidence intervals were generated using the American Community Survey (ACS) public use microdata and the Arizona Department of Health Services (ADHS) Hospital Discharge Data for the period of January 1, 2008 through December 31, 2015. In Arizona, there were over 500,000 inpatient admissions per year in the ADHS HDD. The current data exclude mental health hospitals as well as child and pregnancy admissions. Subgroup population estimates by race/ethnicity, age, and payer status and their corresponding confidence intervals were estimated using replicate weights from the ACS.

Results. Overall, NHW adults consistently exhibited significantly greater hospital utilization than Hispanics in Arizona. Accounting for population size differences, the average annual hospital admission rates for NHWs were 130 per 1,000 NHW vs 60 per 1,000 Hispanics; a two-fold difference. These omnibus differences remained when the data was disaggregated to look within 4 insurance status categories (Medicare, Medicaid, private, and uninsured) and within age. In addition to lower utilization, Hispanics did not appear to enter the hospital in worse condition. For example, the average in-patient mortality rate for NHWs was 17.84 per 1,000 NHW admissions versus 15.42 per 1,000 Hispanic admissions. These admission and outcome trends held in Emergency Department (ED) utilization.

Conclusions. Hispanics are more than 2:1 less likely to use the hospital system and have lower mortality when admitted in the state of Arizona. These differences are evident in both in-patient admissions and ED use and hold within insurance and age categories, supporting a broader Hispanic health advantage. Implications for health surveillance and resilience mechanisms will be discussed.

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Paper Session 39: The Role of Depression and Anxiety in Shaping Physical Health 3:30 PM-3:45 PM

BREAKING SILENCE: UTILIZATION OF A DIVERSE SAMPLE TO IDENTIFY WOMEN AT-RISK FOR DEPRESSION AND ANXIETY FOLLOWING PREGNANCY LOSS

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One in four U.S. women will experience pregnancy loss in their lifetimes. Pregnancy loss is associated with adverse mental health outcomes. Yet, specific risk factors remain understudied, especially in minority populations and women with limited access to psychological treatment. To address these issues, the present study examined how socio-demographics and coping strategies are associated with depression and anxiety among women who experienced pregnancy loss ($N = 825$; Age: 18 - 66 years, $M = 31.87$, $SD = 8.69$). To capture a diverse sample of women who have historically been excluded from pregnancy loss research, data was collected via online survey through social media outlets (e.g., Facebook, Craigslist, YouTube). This unique method of accessing the target population permitted enrollment of a large proportion of minority women ($N = 391$; 47.40%).

Hierarchical regression analyses were conducted to determine which variables predicted depression and anxiety. Predictors included: years since recent loss, education, income, mental health history, age, marital status, religiosity, race/ethnicity, and positive and negative religious coping. When controlling for years since recent loss, education, and income, mental health history, race/ethnicity, and negative religious coping significantly predicted depression, $F(10, 600) = 18.09$, $p < .001$, $R^2 = 23.1$. Using the same covariates, race/ethnicity, negative religious coping, and positive religious coping significantly predicted anxiety, $F(10, 497) = 45.58$, $p < .001$, $R^2 = 33.2\%$. Follow-up analyses of covariance were conducted to examine how depression and anxiety varied as a function of race/ethnicity. When controlling for covariates and mental health history, women who identified as White reported higher levels of depression ($M = 52.78$) compared to women who identified as Hispanic/Latina ($M = 44.60$) and Black/African-American ($M = 43.16$), $F(4, 641) = 5.23$, $p < .001$. However, there were no significant differences in anxiety among women of different races/ethnicities, $F(4, 499) = 1.78$, $p < .132$. Women with a history of a mental health disorder, lower income, less education, and higher levels of negative religious coping reported higher levels of depression and anxiety. Women who identified as White reported higher levels of depression, but not anxiety. These findings can help inform clinical assessment and intervention on which women should be targeted for additional screening and psychosocial support.

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Paper Session 39: The Role of Depression and Anxiety in Shaping Physical Health 3:45 PM-4:00 PM

ASSESSING THE BIDIRECTIONAL RELATION BETWEEN SEDENTARY SCREEN BEHAVIORS AND DEPRESSION AND ANXIETY DISORDERS IN ADOLESCENTS

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Introduction: Screen time (ST) is linked depression and anxiety in adolescents. Cross-sectional studies suggest that some forms ST are more detrimental to mental health than others; they also indicate that physical activity (PA) levels and sex may moderate this relation. However, few studies have tested whether this relation is bidirectional using longitudinal data. Thus, the aim of this study is to test whether bidirectional associations between ST and depression and anxiety differ by form of ST; and to test potential moderators.

Method: Using in-class paper and pencil surveys, Los Angeles high school students ($N=2701$, baseline mean age=14.1 years) reported average hours per day of TV viewing, average hours per day of computer/videogame usage, days per week of PA, and completed the Revised Children's Anxiety and Depression Scale to indicate symptoms of Major Depressive Disorder (MDD), Generalized Anxiety Disorder (GAD), Panic Disorder (PD), and Social Phobia (SP) at baseline and 12-month follow-up. ST was dichotomized as <4 hours/day or ≥ 4 hours/day. Logistic regression models assessed the relation between ST and mental health. Models were adjusted for age, sex, race/ethnicity, SES, school, PA, and BMI percentile; PA and sex were tested as moderators.

Results: ST and MDD were not related. High (≥ 4 hours/day) computer/videogames at baseline predicted greater likelihood of subclinical or higher GAD at follow-up (OR 1.49, 95%CI: 1.19, 1.87); this was stronger in those not meeting the PA guidelines of being active 5+ days/week (OR 1.94, 95%CI: 1.37, 2.75) compared to those meeting PA guidelines (OR 1.23, 95%CI: 0.91, 1.65). Baseline GAD predicted computer/videogames at follow-up (OR 1.27, 95%CI: 1.004, 1.61). TV at baseline predicted a greater likelihood of PD at follow-up (OR 1.42, 95%CI: 1.07,1.89). However, TV was protective against future SP (OR 0.68, 95%CI: 0.47,0.98) while computer/videogames was a risk factor for SP (OR 1.49, 95%CI: 1.15–1.92) 12-months later. Computer/videogames predicted SP more strongly in those who did not meet PA guidelines (OR 2.17, 95%CI: 1.46,3.22) compared to those who did (OR 1.11, 95%CI: 0.79, 1.58). Sex was not a moderator.

Conclusions: Bidirectionality was only observed between GAD and computer/videogames. Moreover, TV was less detrimental to adolescent mental health than computer/videogames. PA was a buffer against anxiety symptoms, even among sedentary participants. Interventions targeting computer/videogames and increasing PA may result in positive mental health outcomes in youth.

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Paper Session 39: The Role of Depression and Anxiety in Shaping Physical Health 4:00 PM–4:15 PM

THE MEDIATING ROLE OF MULTIRACIAL IDENTITY INTEGRATION ON THE RELATION BETWEEN RACISM AND DEPRESSION AMONG MULTIRACIAL ADULTS

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Background: As the multiracial population in the United States increases so does the need to understand how unique identity experiences in this population may influence their mental health outcomes. We examined the mediating role of multiracial identity integration (i.e., an individual's level of racial distance and racial conflict) on the relationship between racism and depression among multiracial young adults.

Method: Participants were 437 multiracial young adults aged 18–25 years. Participants were recruited using Amazon Mechanical Turk and through undergraduate psychology and education research courses. Participants completed measures of racism (*Schedule of Racist Events*; Landrine & Klonoff, 1996), multiracial identity integration (*Multiracial Identity Integration Scale*, Cheng & Lee, 2009), and depression (*Depression, Anxiety, Stress Scales*; Lovibond & Lovibond, 1995). Mediation analyses were conducted using SPSS PROCESS to generate 5000 bootstrap samples with 95% CI.

Results: The overall model was significant, $F(2, 434)=41.71, p R^2=.17$. There was a significant direct effect of racism on depression, $b=.02, SE=.002, F(1, 435)=78.55, p<.001$, and a significant indirect effect of racism on depression through multiracial identity integration, $b=.001, CI [0.002, 0.003]$.

Conclusions: Findings suggest that multiracial young adults who experience more racism also have higher levels of depression. Further, higher levels of racial conflict and racial distancing explain some of this association. Aligning with the conference theme to extend the reach of behavioral medicine, these findings highlight the need for culturally tailored interventions for improving the mental health of multiracial individuals.

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Paper Session 39: The Role of Depression and Anxiety in Shaping Physical Health 4:15 PM–4:30 PM

THE LONG-TERM EFFECTS OF THE DEEPWATER HORIZON OIL SPILL ON WOMEN'S DEPRESSION AND MENTAL DISTRESS

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Objectives: There is a paucity of longitudinal data on the mental health effects of oil spill disasters, in particular the Deepwater Horizon Oil Spill (DHOS) of April 20, 2010. The objectives of this study are to describe changes in mental health among women following an oil spill and to examine the relationship between oil spill exposure and mental health.

Methods: The Women and Their Children's Health Study followed 2038 women in coastal Louisiana in a prospective cohort of the health effects of the DHOS. Subjects were interviewed by telephone in 2012–2014 and again in 2014–2016. Oil spill exposure was characterized as economic impact from and physical/environmental exposure to the spill. Affirmative responses to survey items were summed to give exposure scores. Time since the oil spill was the number of years between each interview date and the date of the DHOS. Outcomes were depressive symptoms (measured by the 20-item Center for Epidemiological Studies Depression Scale) and mental distress (measured by the Kessler-6 scale). Rate ratios were estimated for the association between oil spill exposure, time since the oil spill, and the mental health outcomes of depressive symptoms and mental distress scores using generalized estimating equations.

Results: After adjustment for relevant demographics, depressive symptoms increased over two time points following the DHOS, while symptoms of mental distress decreased in that same time period. For every year increase in time since the DHOS, the expected rate ratio for depressive symptoms increased by a factor of 1.08 (95% CI 1.06–1.11). In contrast, the expected rate ratio for mental distress decreased by a factor of 0.97 (95% CI 0.95–0.99). In addition, initial associations between economic and physical exposure to the DHOS persisted up to 6 years after the spill, with women who were more highly exposed experiencing higher levels of depressive symptoms (expected rate ratios 1.08 [95% CI 1.04–1.13] for economic exposure and 1.11 [95% CI 1.06–1.14] for physical exposure) and mental distress (expected rate ratios 1.05 [95% CI 1.01–1.08] for economic exposure and 1.11 [95% CI 1.07–1.13] for exposure) at each time point.

Conclusions: Different mental health outcomes exhibit different patterns of recovery following an oil spill disaster, but the strength of their association with oil spill exposure remained the same. A better understanding of these patterns can help direct critical mental health response efforts.

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MERITORIOUS AWARD WINNER
Paper Session 39: The Role of Depression
and Anxiety in Shaping Physical Health
4:30 PM-4:45 PM

DEPRESSION WITH ONSET IN THE PERIPARTUM AND DNA METHYLATION CORRELATES: AN INTEGRATIVE AND CRITICAL REVIEW

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Background: Major depression with onset in the peripartum (MDP) has been overwhelmingly linked to negative birth, infant, and child health outcomes but the pathophysiology is poorly understood. Theoretical and empirical evidence suggests that biologically mediated mechanisms including differentially methylated DNA (DNAm) are, in part, responsible for the relationship between MDP and negative postnatal outcomes. Technological advances in the measurement of the methylome have facilitated these investigations, yet specific challenges remain including inconsistent results, lack of standards in reporting results and defining phenotype, unsophisticated study designs, and poor reproducibility. These limitations continue to hinder scientific progress.

Purpose: This integrative review compiled existing DNAm studies of MDP restricted to onset during pregnancy in order to evaluate the robustness of current results and make specific recommendations for future studies.

Methods: A comprehensive literature search identified studies reporting DNAm correlates of MDP with prenatal onset. A quality scoring rubric was used to quantify how well studies adhered to best practices for study design and reporting. Two raters independently assigned articles scores based on sample size, covariate reporting, phenotype measurement, and other important study design considerations.

Results: Seventeen studies were identified. Quality scores ranged from 8 to 16 out of 24 ($M = 11.9$; $SD = 2.4$), with higher scores indicating higher quality. Use of cross-sectional study design, reliance on candidate gene selection, and poor covariate reporting were the most significant contributors to lower quality scores.

Conclusion: Experimental design flaws undermine the credibility of individual study findings, and the pervasiveness of poor reporting practices hinders cross-study comparisons. The consequences of poor study design choices and recommendations for planning and executing DNAm studies adhering to best practices are discussed. Given that the current limitations cannot be adequately addressed by a single study, specific directions for improvement are provided for researchers, reviewers, and funding agencies to enhance the science overall.

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Paper Session 40: Making the Connection:
Mindfulness and Physical Activity Among Cancer
Patients
3:30 PM-3:45 PM

MINDFULNESS AND PSYCHOLOGICAL ADJUSTMENT IN METASTATIC BREAST CANCER PATIENTS AND THEIR FAMILY CAREGIVERS

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Greater mindfulness, or non-judgmental attention to the present moment, has been associated with better psychological adjustment in cancer survivors, yet little research has examined this association in patient-caregiver dyads facing advanced-stage cancer. This is notable given that many patients and family members cope together as a social unit; thus, mindfulness may be an important protective process that facilitates better dyadic coping. In the present study of women with metastatic breast cancer (MBC) and their family caregivers, we examined relationships between participants' mindfulness and their own/partner's mental health outcomes. Participants ($n=33$ dyads) were recruited from an academic cancer center. MBC patients and caregivers completed self-report measures of mindfulness (nonjudging, acting with awareness, nonreactivity), depression, anxiety, and global mental health. The majority of patients were Caucasian (89%), with a mean age of 56 years ($SD=11.7$). About half of the caregivers were male (49%) and spouses of the patients (55%), with a mean age of 49 years ($SD=15.9$).

Dyadic data were analyzed with actor-partner interdependence models (APIM) using multi-level modeling. Actor effects were observed for the nonjudging facet of mindfulness: higher levels of nonjudging were associated with lower depressive symptoms and anxiety and better global mental health in patients ($B=-.70$, $p<.01$; $B=-.73$, $p<.01$; $B=.50$, $p<.01$, respectively) and caregivers ($B=-.39$, $p=.03$; $B=-.44$, $p=.01$; $B=.60$, $p<.01$). Similarly, higher levels of acting with awareness were associated with lower depressive symptoms and anxiety in patients ($B=-.42$, $p=.02$; $B=-.41$, $p=.02$) and caregivers ($B=-.39$, $p=.03$; $B=-.34$, $p=.05$). Greater nonreactivity was only related to better global mental health in patients and was unrelated to caregivers' mental health outcomes. In contrast to the aforementioned actor effects, partner effects were mostly nonsignificant, with the exception of a positive association between nonreactivity in patients and global mental health in caregivers ($B=.35$, $p=.05$).

Results suggest that MBC patients and caregivers experience mental health benefits from practicing mindfulness. However, these benefits appear to be primarily intrapersonal, and not interpersonal, in nature. Given the widespread adoption of mindfulness-based interventions in cancer, for patients and caregivers alike, it is important to determine whether and how mindfulness affects dyadic adjustment to cancer.

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CITATION AWARD WINNER
Paper Session 40: Making the Connection:
Mindfulness and Physical Activity Among
Cancer Patients 3:45 PM-4:00 PM

LEISURE ACTIVITIES AND COGNITIVE PERFORMANCE
AMONG OLDER BREAST CANCER PATIENTS AND NON-CAN-
CER CONTROLS

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Background: Participation in leisure activities has generated considerable interest as a way that older adults can lessen age-related declines in cognitive functioning. However, little is known about whether older breast cancer patients can benefit to the same extent as individuals without cancer or whether genetic polymorphisms known to impact cognition may limit ability to profit from participation in leisure activities.

Methods: Participants were patients with newly diagnosed non-metastatic breast cancer and matched friend or community controls aged ≥ 60 years without prior systemic treatment, dementia, or neurologic disease. Participants completed a battery of neuropsychological tests that were classified into 1) learning and memory (LM) or 2) attention, processing speed and executive functioning (APE) domains. They also reported on participation in 11 common cognitively stimulating lifestyle activities (e.g., reading, playing card games) over the past year. Genotyping was conducted for Apolipoprotein E (*APOE*), Catechol-O-Methyltransferase (*COMT*) and Brain Derived Neurotrophic Factor (*BDNF*) and persons were classified as having a risk allele (vs. no risk allele) for worse cognitive performance (*APOE*-e4, *COMT*-any val allele, *BDNF*-any met allele). Moderated regression analyses were conducted and the effects were independent of race, recruitment site, premorbid IQ and comorbid conditions.

Results: The sample consisted of 725 women who averaged almost 68 years of age (range 60–98) of whom over half were diagnosed with breast cancer ($n = 372$, 51.3%) and 80% were White. Participants reported an average of 6.6 activities. The results indicated that participation in leisure activities was associated with better LM and APE performance ($p < .001$). Among the moderators, cancer patients and controls experienced similar leisure activity related gains to performance. Older age was associated with a greater benefit for participation in leisure activities on both cognitive outcomes and *APOE*-e4 carriers exhibited a greater benefit from participating in leisure activities for LM than non-carriers. No moderator effects were seen for *COMT* or *BDNF*.

Conclusions: Cognitively stimulating leisure activities may be an effective way for older adults to maintain cognitive performance, especially in late life. Future research should examine the extent to which leisure activities can buffer longitudinal declines and treatment-related cognitive declines among cancer patients.

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CITATION AND MERITORIOUS AWARD
WINNER
Paper Session 40: Making the Connection:
Mindfulness and Physical Activity Among
Cancer Patients 4:00 PM-4:15 PM

DOSE-RESPONSE EFFECTS OF ACUTE AEROBIC EXERCISE ON
COGNITIVE FUNCTION IN BREAST CANCER SURVIVORS

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Physical activity is protective against a host of diseases and has been shown to provide many health benefits to breast cancer survivors. Recently, it has been suggested that physical activity may also improve several domains of cognitive function. The purpose of the present study was to examine the effects of varying durations (e.g., 10, 20 and 30 minutes) of physical activity on executive function domains and processing speed in breast cancer survivors in an effort to determine the optimal length of acute exercise for the greatest improvements in cognitive function. It was hypothesized that the relationship between exercise duration and cognitive function improvements would be curvilinear, such that 20 minutes of exercise would provide the largest improvements in cognition (e.g., higher accuracy, shorter reaction time) compared to 10 and 30 minutes. Breast cancer survivors ($N=48$, $M_{age}=56.02$) completed two sessions in counterbalanced order: moderate-intensity treadmill walking and seated rest. Participants were also randomized to one of three session duration groups: 10 ($n=15$), 20 ($n=16$), or 30 ($n=17$) minutes, reflecting the length of time spent both walking and resting. Immediately before and after each session, women completed a battery of cognitive tasks (e.g., inhibition, cognitive flexibility, processing speed). Within- and between-subjects repeated measures analyses of variance revealed several moderately-sized three-way (e.g., time by activity by duration) interactions. On the task switching paradigm, women performed significantly slower after rest compared with after exercise in both the 10- ($d = -.96$) and 30-minute ($d = -.52$) duration groups. On the flanker task, women were significantly less accurate after the rest condition compared with after exercise in the 20-minute duration group ($d = .75$). On the processing speed task, women performed significantly faster after exercise compared with after rest in the 20-minute duration group ($d = -.24$). These findings suggest that acute bouts of exercise, specifically walking, may be employed for maintenance, and possibly improvement, of domains of cognitive function after cancer. While cancer related cognitive impairment still remains largely misunderstood, results from the present study offer preliminary evidence for the positive relationship between exercise and cognition.

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CITATION AWARD WINNER
Paper Session 40: Making the Connection:
Mindfulness and Physical Activity Among
Cancer Patients 4:15 PM-4:30 PM

THE MEDIATING EFFECT OF CANCER-RELATED FATIGUE
 STEMMING FROM YOGA ON WALKING, GENERAL PHYSICAL
 ACTIVITY, AND QUALITY OF LIFE

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Background: Cancer-related fatigue (CRF) negatively affects patients' physical function (e.g. general physical activity (GPA), walking) and quality of life (QOL). We have previously shown that yoga lowers CRF in cancer survivors. However, whether yoga improves physical function and QOL in cancer survivors is not clear. In addition, whether the improvements in CRF mediate the effect of yoga on physical function and QOL is unknown. This study assessed: (1) the effect of yoga on CRF, walking ability, GPA, and QOL and (2) the mediating effects of improved CRF on changes in walking ability, GPA, and QOL.

Methods: We conducted a secondary analysis on data collected from a phase III randomized controlled clinical trial with 2 arms (standard care and standard care + 4-week of Yoga for Cancer Survivors (YOCASSM)). Total 328 cancer survivors (96% female; mean age 54.6 years; 77% had breast cancer) completed a Symptom Inventory (for assessing walking ability, GPA, and QOL, each on scale 0–10) and the Multidimensional Fatigue Scale Inventory (MFSI) for evaluating CRF pre- and post-intervention. Analysis of covariance was used to assess the effect of yoga vs. standard care on CRF, walking, GPA, and QOL. Causal mediation analyses were conducted to estimate the mediating effects of changes in MFSI total scores on the relationship between yoga and walking, GPA, and QOL.

Results: Yoga significantly improved CRF ($p < 0.01$), walking ability ($p < 0.01$), GPA ($p < 0.01$), and QOL ($p < 0.01$), compared to standard care. CRF significantly mediated the changes in walking ability by 0.45 points ($p < 0.01$) in addition to the direct effect of yoga on walking by 0.57 points, suggesting that 44% of the improvement in walking was mediated through reducing CRF. CRF also significantly mediated the changes in GPA by 0.54 points ($p < 0.01$) in addition to the direct effect of yoga on GPA by 0.47 points, suggesting that 53% of the improvement in GPA was mediated through reducing CRF. Similar mediating effect was also found between CRF and QOL where CRF significantly mediated the changes in QOL by 0.43 points ($p < 0.01$) in addition to the direct effect of yoga on QOL by 0.52 points, suggesting that 45% of the improvement in QOL was mediated through reducing CRF.

Conclusions: Yoga improved walking ability, engaging in general physical activity, and overall quality of life in cancer survivors. These effects can be partially explained (mediated) by reductions in cancer-related fatigue. Funding: NCI UGCA189961, R25 CA102618.

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Paper Session 40: Making the Connection:
Mindfulness and Physical Activity Among Cancer
Patients 4:30 PM-4:45 PM

GREATER MINDFULNESS ASSOCIATED WITH LOWER PAIN, FA-
 TIGUE AND PSYCHOLOGICAL DISTRESS IN WOMEN WITH META-
 STATIC BREAST CANCER

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Women with metastatic breast cancer have average life expectancies of about two years, and report high levels of disease-related symptoms including pain, fatigue, psychological distress, and sleep disturbance. Mindfulness is associated with lower levels of these symptoms in early stage breast cancer patients and in other illness populations, but published studies have yet to examine these associations in patients with advanced cancer. Here we report on analyses of baseline associations between mindfulness scales (Five Facet Mindfulness Questionnaire-Short Form) and pain (Brief Pain Inventory), fatigue (Brief Fatigue Inventory), depression and anxiety (Hospital Anxiety and Depression Scale), and sleep disturbance (Pittsburgh Sleep Quality Index) in a sample of 65 women with metastatic breast cancer who participated in a randomized controlled trial of a Mindful Yoga intervention. The mean age of the sample was 57.3 years, 23.4% were African American and 74% Caucasian, 64.1% were married or living with a partner, and their mean years of education was 17.0. The internal consistency coefficients for all measures were adequate. Pearson correlation analyses demonstrated significant associations in the expected direction between all five mindfulness scales and several symptom measures, with the mindfulness non-reactivity and mindfulness non-judging scales showing the most consistent set of associations. Higher scores on the mindfulness non-reactivity scale were associated with lower pain severity ($-0.25, p = .050$), pain interference ($-0.42, p = .001$), fatigue ($-0.32, p = .010$), anxiety ($-0.51, p < .001$), depression ($-0.52, p < .001$), and sleep disturbance ($-0.31, p = .020$). Higher scores on the mindfulness non-judging scale were associated with lower pain severity ($-0.28, p = .028$), pain interference ($-0.32, p = .011$), fatigue ($-0.25, p = .049$), anxiety ($-0.54, p < .001$), and depression ($-0.31, p = .015$). In addition, in this population correlations between mindfulness and depression and anxiety scores were notably stronger than in the population used to develop the Five Facet Mindfulness Questionnaire-Short Form. These findings will be discussed relative to their implications for interventions aimed at increasing mindfulness.

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Paper Session 41: Reducing Skin Cancer Risk through Individual- and Policy- Level Approaches 3:30 PM-3:45 PM

THE ASSOCIATION BETWEEN STATE INDOOR TANNING LAWS AND THE PREVALENCE OF INDOOR TANNING AMONG US HIGH SCHOOL STUDENTS

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Objective: Indoor tanning is an artificial and avoidable source of exposure to intense levels of ultraviolet radiation that increases the risk of both melanoma and non-melanoma skin cancers. In recent years, many states have passed new indoor tanning laws or strengthened preexisting laws to protect youth from the harms of indoor tanning. However, evidence to support the effectiveness of youth tanning laws is limited. The purpose of this study is to examine the association between state indoor tanning laws and indoor tanning behavior using nationally representative samples of US high school students aged <18 years.

Methods: Data from the 2009, 2011, 2013, and 2015 national Youth Risk Behavior Surveys were combined (n=41,313) to analyze the association between two types of state indoor tanning laws (age restrictions and parental permission laws) and the prevalence of indoor tanning during the past 12 months. Age restrictions are laws that prohibit minors younger than a certain age from using an indoor tanning device. Parental permission laws are laws that prohibit minors younger than a certain age from using an indoor tanning device without parental consent or accompaniment. We compared prevalence of indoor tanning among high school students affected by either of two types of state indoor tanning laws with students not affected by laws. We estimated adjusted prevalence ratios (aPR) of indoor tanning behavior with 95% confidence intervals (CI) using multivariable logistic regression models stratified by sex and adjusted for student age, race/ethnicity, and survey year.

Results: From 2009 to 2015, prevalence of indoor tanning decreased from 24.1% to 9.5% (P<0.001) among female high school students, and from 5.7% to 3.3% (P<0.001) among male students. Age restriction laws were associated with a 47% (aPR=0.53; 95% CI 0.40–0.71, P<0.001) lower indoor tanning prevalence among female high school students. We did not find a statistically significant association between parental permission laws and indoor tanning prevalence among either female or male high school students (Female: aPR=0.94; 95% CI 0.80–1.11, P=0.49; Male: aPR=0.95; 95% CI 0.75–1.21, P=0.70).

Conclusions: Age restriction laws were associated with reductions in indoor tanning prevalence from 2009 to 2015 among female high school students. Such reductions may reduce the health and economic burden of skin cancer.

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CITATION AWARD WINNER Paper Session 41: Reducing Skin Cancer Risk through Individual- and Policy- Level Approaches 3:45 PM-4:00 PM

UNDERSTANDING THE PRO-TANNING COMMUNICATION ENVIRONMENT: CONTENT ANALYSIS AS A CRITICAL STEP TOWARDS MESSAGE DEVELOPMENT

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Background. Tanning bed use increases the risk of several types of skin cancers, including melanoma. To respond to the Surgeon General's call to develop, disseminate, and evaluate messages to reduce indoor tanning (IT) in the 2014 Call to Action to Prevent Skin Cancer, an understanding of the IT communication environment is necessary. Our study sought to identify the types and prevalence of claims in the pro-tanning communication environment around IT to inform the development of skin cancer prevention messages.

Methods. To enable an analysis of pro-IT content an average Google user may encounter, pro-tanning sites (N=78) were identified by entering a series of general search terms (e.g. "indoor tanning benefits") in Google search. Using systematic quantitative content analysis, site characteristics (e.g. site domain, site type - blog vs. industry site) were coded, as well as claims regarding safety, health, appearance/social and mood/relaxation benefits of IT. All text appearing on the sites was reviewed and coded.

Results. Tanning salons made up 56% of pro-tanning sites, followed by blogs (28%) and industry trade sites (13%). Two prominent types of claims emerged: IT safety (90% of sites) and health benefits of IT (86% of sites). Industry trade sites featured the highest number of safety claims (M=3.2, SD=.92), followed by tanning salons (M=3.0, SD=1.97), and blogs (M=2.5, SD=1.61). Within safety, the most common claims were: 1) IT is safe because it is controlled in terms of time and/or UV dose (81%), and 2) government regulation of IT ensures its safety (56%). Blogs featured the highest average number of health claims (M=3.2, SD=2.16), followed by tanning salons (M=3.0, SD=2.98), and industry sites (M=2.9, SD=2.18). Within health, the most common claims were: 1) IT as a good source of vitamin D (69%), and 2) getting a base tan from IT provides protection from the sun (41%). Only 36% of sites mentioned any appearance or social claim and only 21% featured a mood/relaxation claim.

Conclusions. Pro-tanning sites frequently include IT safety and health claims. The majority of claims are misleading, prompting concern from a public health perspective, as tanners may use these claims to justify their tanning behavior. By dissecting and refuting these claims, prevention efforts may be more effective in creating a disruptive association between IT and many advertised "benefits" of engaging in this dangerous behavior.

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Paper Session 41: Reducing Skin Cancer Risk through Individual- and Policy- Level Approaches 4:00 PM-4:15 PM

COUNTERING INDOOR TANNING ARGUMENTS: AN EXPERIMENT USING SKIN CANCER PREVENTION MESSAGES

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Background. In contrast with declining incidence rates for many cancers, the incidence of skin cancer has been steadily increasing, particularly among young Caucasian women, primarily due to preventable causes such as indoor tanning (IT). A wide array of misinformation about IT has proliferated through media channels for over a decade, embedded with kernels of truth about IT (e.g. a “base” tan may provide an SPF of 4 or less, providing little if any protection against sunburn). Inoculation theory offers a two-sided refutational messaging strategy to acknowledge the kernels of truth, deconstruct and refute the misinformation, and provide a recommended response. To understand the utility of inoculation theory in the context of IT, we conducted an experiment with two-sided refutational, one-sided, and control messages about IT prevention.

Methods. Sorority members ($N = 649$) were recruited into an experiment delivered through an online survey instrument. The sample was all women, age 18–22 ($M=20$, $SD=1.26$), and mostly white (96%; 6% were Hispanic). Participants were randomly assigned to either the two-sided ($n=263$), one-sided ($n=259$), or control ($n=127$) conditions. Outcomes measured were perceived message effectiveness (PME), counterarguing, cognitive processing, IT intentions, and outcome expectations (OEs).

Results. Compared to one-sided and control, participants in the two-sided condition: rated messages 1) higher in increasing their confidence to avoid IT ($p<0.001$) and 2) more convinced that misinformation about IT benefits is untrue ($p<0.01$); 3) were less likely to counter-argue the IT prevention message ($p<0.001$); 4) had a greater net of negative thoughts about IT ($p<0.01$); and 5) reported lower intentions to engage in IT in the next year ($p<0.05$). Compared to control, participants in the two-sided condition reported fewer positive and more negative OEs (both $p<0.05$). No differences in OEs were found between the one-sided condition and the two-sided and control conditions.

Conclusions. Two-sided inoculation messages may be a valuable tool for reducing unhealthy behaviors such as indoor tanning for which an abundance of misinformation exists. Although one-sided messages performed similarly to two-sided messages for some outcomes, two-sided messages were most effective overall, especially on the key outcome of intentions. Message designers should consider developing and disseminating indoor tanning prevention messages based on inoculation theory.

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Paper Session 41: Reducing Skin Cancer Risk through Individual- and Policy- Level Approaches 4:15 PM-4:30 PM

MODERATORS OF IMPLEMENTATION OF OCCUPATIONAL SUN PROTECTION POLICY BY PUBLIC-SECTOR EMPLOYERS IN A RANDOMIZED TRIAL

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Outdoor workers are at high risk for skin cancer. Organizational and employee characteristics were examined as moderators of implementation of occupational sun protection policy. Public employers ($n=98$) in Colorado participated in a randomized-controlled trial evaluating the *Sun Safe Workplaces (SSW)* intervention. Based on Diffusion of Innovations Theory, project staff promoted sun safety policy adoption and trained workers in sun protection. Line supervisors ($n=3,650$) and workers ($n=1,555$) completed a 2-year follow-up survey at 68 employers (69% followed-up). More line supervisors reported that intervention employers provided free/reduced price sunscreen ($p=0.003$) and communicated about sun safety ($p<0.001$) with workers than control employers. Greater communication also occurred by employers with a policy than without one ($p=0.005$). More workers recalled receiving written sun safety messages at intervention employers ($p<0.001$) and sun safety training ($p=0.009$). Moderator analyses showed that at larger intervention employers, wide-brimmed hats (100 employees: $M=0.472$; 600 employees: $M=0.906$; $p=0.009$), long work or uniform pants ($M=0.288$, $M=0.868$; $p=0.025$), and temporary or permanent outdoor shade structures ($M=0.135$, $M=0.432$; $p=0.028$) were provided more often than at smaller intervention employers. Larger employers with policies also provided more shade than smaller employers (100 employees: $M=0.078$, 600 employees: $M=0.268$; $p=0.033$). At intervention employers, more older workers reported receiving written messages (20 years old: $M=0.649$, 60 years old: $M=0.751$, $p=0.016$) and more longer-tenured workers reported being trained (1 year: $M=0.409$; 25 years: 0.715, 0.002) than younger and newer workers. Size and job tenure did not seem to alter control employers' actions, but fewer older workers reported receiving training at control workplaces (20 years old: $M=0.531$, 60 years old: $M=0.415$) than younger workers. Larger organizations may have the human capital and slack resources to provide sun protection equipment, while smaller organizations with fewer resources may consider policy adoption without implementation sufficient or rely on employees to provide their own precautions. Employers with older workers may feel they are more at risk for skin cancer or feel older workers may see more value in occupational sun safety than those with young workers. Smaller organizations with younger workers may need assistance to take action to implement sun safety policies.

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CITATION AWARD WINNER
Paper Session 41: Reducing Skin Cancer Risk through Individual- and Policy- Level Approaches
4:30 PM-4:45 PM

A BRIEF FACIAL MORPHING INTERVENTION TO REDUCE SKIN CANCER RISK BEHAVIORS: RESULTS FROM A RANDOMIZED CONTROLLED TRIAL

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Objective: Excessive UV exposure is the strongest environmental risk factor for developing skin cancer and is often driven by appearance concerns. Thus, interventions that aim to reduce skin cancer risk via reductions in UV exposure may benefit from overtly addressing appearance-based motives. The current study tested the efficacy of a brief appearance-based facial morphing program to reduce intentional UV exposure among individuals at elevated risk for skin cancer.

Method: A three-arm randomized controlled trial was employed (N = 217) comparing facial morphing + health information to: 1.) mindfulness + health information; and 2.) health information only. Participants were young adults (81% women; *M* age = 19.72, *SD* = 2.50 years) with a history of recent intentional tanning and future intentions to continue to tan. Primary outcomes were indoor and outdoor tanning frequency, with secondary outcomes of tanning intentions, tanning attitudes, body image, and affect.

Results: Participants assigned to the facial morphing condition generally reported less frequent indoor and outdoor tanning, lower intentions to tan in the future, and more negative attitudes toward tanning compared to other participants, displaying small to small-to-medium sized effects. Additionally, facial morphing participants were not at increased risk for developing negative body image, or negative affect.

Conclusions: Facial morphing programs may offer a brief, efficacious, and scalable augmentation to standard of care in reducing intentional UV exposure.

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CITATION AWARD WINNER
Paper Session 42: Advancing the Health of Adolescents and Young Adults
3:30 PM-3:45 PM

EXECUTIVE FUNCTIONS AND DAILY SELF-REGULATION TO SUPPORT ADHERENCE ACROSS THE TRANSITION INTO EMERGING ADULTHOOD

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Type 1 diabetes (T1D) requires complex daily self-regulation such as developing plans for managing diabetes in daily life, preventing daily diabetes problems, and regulating emotions and self-efficacy when diabetes problems occur. These processes draw on neurocognitive skills (e.g., executive function; EF) which may be challenged during the year after high school, a high risk time when youth experience life transitions while managing diabetes more independently. The present study examined whether problems with EF are associated with less effective daily self-regulation and adherence, and whether associations are stronger as youth transition out of high school. Seniors in high school with T1D for at least one year (N = 241; 61.4% female; *M* age = 17.8 years) completed the BRIEF (i.e., self-report measure of problems in EF) and two 14-day daily diaries, one in the senior year of high school and one the following year. At the end of each day, participants completed an on-line survey reporting on whether they had planned for checking blood glucose, the occurrence of diabetes problems, negative affect, self-efficacy, and adherence over the past 24 hours. Multilevel models with repeated measures examined within-person daily associations between diabetes problems and self-regulatory processes (i.e., affect, self-efficacy, adherence), whether between-person differences in EF moderated these associations, and whether associations differed across year. At each time point, individuals with more problems in EF displayed lower daily planning, more frequent daily diabetes problems, and lower daily adherence on average across days (*p*'s < .01). Participants reported fewer diabetes problems on days they planned more (*b* = -.10), as well as higher negative affect (*b* = .10), lower self-efficacy (*b* = -.21), and poorer adherence (*b* = -.08) on days when more diabetes problems occurred (*p*'s < .001). Although the daily association between diabetes problems and negative affect was stronger for those with more EF problems (*b* = .002), EF did not moderate other daily associations. The strength of daily associations also did not differ across years, suggesting late adolescents and emerging adults are equally vulnerable to daily self-regulation challenges. Findings reveal the daily self-regulation processes necessary to support adherence at a high risk time of development. Teaching youth with poorer EF to plan daily for T1D management so as to prevent diabetes problems may be helpful.

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Paper Session 42: Advancing the Health of Adolescents and Young Adults 3:45 PM-4:00 PM

BEHAVIOR CHANGE TECHNIQUES IN TRIALS TARGETING WEIGHT MANAGEMENT IN YOUNG ADULTS: RESULTS FROM THE EARLY TRIALS

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Background: Standardization, rigor, and precision are important to enable study replicability and reproducibility. A taxonomy of behavior change techniques (BCTs) was developed to standardize labels and definitions used in complex behavioral interventions (Michie, 2013). This taxonomy was applied to the 7 studies within the Early Adult Reduction weight through LifeStYle intervention (EARLY) Trials. Use, and degree of emphasis, of the BCTs in the 7 control arms and 10 active treatment comparison arms is described.

Methods: The EARLY studies were randomized clinical trials targeting weight management in 18–35 year old participants, and featured interactive technology and media as important components of the interventions. The BCT taxonomy employed defines 93 BCTs clustered into 16 domains, each including between 3 and 11 BCTs. Multiple raters trained in the BCT definitions determined which BCTs were used by each arm, separately for the first and second years of intervention. The ratings were reviewed with study personnel to reach consensus agreement. The Analytical Hierarchy Process (AHP) was applied to determine the relative emphasis of each domain, and each BCT within domain, for each of the 17 arms.

Results: As expected, the 10 active comparison arms used more BCTs than the 7 control arms. The number of BCTs ranged from 15–45 (median: 26) across active arms and from 2–39 (median:7.5) in the control arms in year 1 and from 17–45 (active arms, median: 29) and 0–39 (control arms, median: 5) in year 2. In one of the studies with a relatively intense control condition there was only 1 more BCT used in the active than in the control arm, but in the other studies the differences in the number of BCTs (active minus control) ranged from 6–22 in year 1 and 6–27 in year 2.

All domains were represented in at least one arm, but 35 of the 93 BCTs were not. Two BCTs, instruction on how to perform a behavior (Shaping Knowledge domain) and credible source (Comparison of Outcomes domain) were used by all 17 arms in year 1 and 16/17 in year 2 with the former emphasized more than the latter.

Though not used in all of the intervention arms in year 1, goal setting, self-monitoring of behavior, and social support tended to be strongly emphasized when used. In year 2, several of the BCTs were emphasized more strongly across the arms that used them than in year 1, among them social support, information about health consequences, credible sources and prompts and cues.

Conclusion: The BCT taxonomy provides a useful framework to describe behavioral interventions and helps to demonstrate the complexity and richness of weight-targeting interventions in young adults. An important strength of this technique is that it will enable us to examine, across studies, the relationship between BCTs used and study outcomes.

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CITATION AND MERITORIOUS AWARD WINNER

Paper Session 42: Advancing the Health of Adolescents and Young Adults

4:00 PM-4:15 PM

ADHERENCE AND AFFECTIVE REACTIVITY TO DAILY DIABETES STRESS AMONG LATE ADOLESCENTS AND EMERGING ADULTS WITH TYPE 1 DIABETES

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Effective type 1 diabetes (T1D) management requires that individuals regulate their emotions when experiencing the ongoing stress and hassle of managing a serious illness. This may be especially important during late adolescence and early emerging adulthood, when individuals experience heightened negative emotions and deteriorating adherence while managing diabetes in new work and school settings that are increasingly separate from parents. Higher daily stress may disrupt self-care behaviors and impair metabolic control (e.g., checking blood glucose less on stressful days) and may generate affective reactions such as higher negative affect (NA) and lower positive affect (PA). Such affective reactions to daily stress may be tempered by an individual's level of adherence. In other illness populations, poorer treatment adherence has been linked with higher affective reactivity to daily stress. The present study employed daily diary and survey methods to examine whether individuals who exhibited lower levels of affective reactivity to daily diabetes stress displayed better T1D management. Late adolescents with T1D who had been diagnosed for more than one year completed measures during their senior year of high school (Time 1) and again one year later (Time 2) (N=241; 61.4% female; Mage=17.8). At each time point, participants completed a survey measure of adherence and a 14-day end-of-day daily diary, assessing NA, PA, and the total number of daily diabetes stressors experience in the last 24 hours. Hierarchical linear modeling revealed that on days when participants reported more diabetes stressors, they experienced higher NA and lower PA at both time points. Furthermore, participants who reported better adherence on the survey displayed lower NA reactivity ($\beta = -0.431$, p -value < 0.001) and lower PA reactivity ($\beta = 0.272$, p -value = 0.044) to daily diabetes stress at Time 2, but not at Time 1. In other words, early emerging adults with better adherence displayed smaller increases in NA and smaller decreases in PA as they moved from a low stress to a high stress day compared to those with poorer adherence. Importantly, adherence was not related to affective reactivity to daily diabetes stress at Time 1 when participants were seniors in high school. These findings suggest that regulating both PA and NA when dealing with the daily hassles of diabetes management may be an important component of managing T1D as late adolescents transition into emerging adulthood.

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CITATION AWARD WINNER

Paper Session 42: Advancing the Health of Adolescents and Young Adults 4:15 PM–4:30 PM

IS GUARDIAN PERMISSION A BARRIER TO SEXUAL HEALTH RESEARCH AMONG ADOLESCENT MALES INTERESTED IN SEX WITH MALES (AMSM)?

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BACKGROUND: Research is needed to address the disproportionate number of HIV infections among adolescent males interested in sex with males (AMSM). This study examined the extent to which AMSM perceive guardian permission to be a barrier to sexual health research participation.

METHODS: AMSM ($N = 206$; ages 14–17; 47% out to a guardian; 48% racial/ethnic minority; 66% gay-identified) completed an online survey on sexual attitudes/behaviors and pornography use. A waiver of guardian permission was obtained. We assessed whether requiring guardian permission would be a barrier to participating in the *current* survey or *future* sexual health intervention research. Differences by outness to a guardian were determined using logistic regression models adjusted for age, race/ethnicity, and sexual orientation.

RESULTS: Most AMSM would not participate if guardian permission was required (current: 83%; future: 87%). Youth who were not out to a guardian were less likely to participate if guardian permission was required (current: AOR=0.3, 95%CI: 0.1–0.8; future: AOR=0.2, 95%CI: 0.1–0.6). Most felt guardian permission should not be required (current: 94%; future: 98%). Those who were not out were less likely to agree that guardian permission provided opportunities for parents to explain research risks and benefits for the current survey (AOR=0.5, 95%CI: 0.3–0.9). Most agreed guardian permission might lead to questions about their sexual behaviors (current: 92%; future: 91%) and pornography use (current: 89%; future: 90%) or to being outed (current: 80%; future: 78%). Compared to participants who were out, those who were not out were more likely to feel that they would be punished (current: AOR=2.3, 95%CI: 1.3–4.2; future: AOR=3.3, 95%CI: 1.8–6.0), outed (current: AOR=8.7, 95%CI: 3.3–22.9; future: AOR=14.5, 95%CI: 4.8–43.9), kicked out of the house (current: AOR=3.3, 95%CI: 1.6–6.7; future: AOR=2.6, 95%CI: 1.3–5.3), or forced to speak with a counselor/religious person (current: AOR=2.1, 95%CI: 1.2–3.8; future: AOR=1.9, 95%CI: 1.1–3.4) if guardian permission was required.

CONCLUSIONS: AMSM, especially those not out to family, perceive guardian permission as a significant barrier to participation in sexual health research. This information can be used to help investigators and institutional review boards (IRBs) make informed decisions about waiver of guardian permission for HIV research involving AMSM to ensure they have opportunities to participate in research critical to their health.

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CITATION AWARD WINNER

Paper Session 42: Advancing the Health of Adolescents and Young Adults 4:30 PM–4:45 PM

A PILOT RANDOMIZED CONTROLLED TRIAL OF A GRATITUDE INTERVENTION FOR ADOLESCENTS WITH TYPE 1 DIABETES

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Background: Adolescents with type 1 diabetes are at an increased risk for psychiatric disorders, which are associated with deteriorating glycaemic control. We wanted to examine whether a gratitude intervention based on writing in a gratitude journal on a daily basis for eight weeks would improve their psychological and physical health compared to standard care. Gratitude interventions have previously demonstrated improvements in psychological outcomes including depression, but have never been trialled in a pediatric population with a chronic illness.

Methods: 80 adolescents (aged 10–16 years) with type 1 diabetes were recruited and randomized into the control group (standard care) or the intervention group (gratitude journal). The primary outcome measure was stress and secondary outcomes measures included depression, quality of life, gratitude, self-care behaviours, glycaemic control and parental stress. Sixty participants completed the baseline and follow-up assessments and were included in the analyses. Independent t-tests were used to examine differences between groups at the eight week follow-up, and linear regression was used to examine what factors in the intervention group predicted psychological outcomes and glycaemic control at follow-up.

Results: We found little evidence of any group differences at follow-up in any of the outcome measures ($p > .05$). However, when examining sex differences, we found evidence that the gratitude intervention had improved quality of life, depression, and gratitude for boys in the intervention group compared to boys in the control group (all p -values $< .05$). The linear regression analysis (including both boys and girls) found that gratitude at follow-up was a significant predictor of glycaemic control at follow-up in the intervention group ($\beta = -.389$, $p = .041$), contributing to 15% of the variance in glycaemic control.

Conclusion: This is the first study to examine the efficacy of a gratitude intervention for a pediatric population with a chronic illness, with results demonstrating that the intervention may be effective in improving psychological health for boys but not girls. A gratitude intervention is a cost-effective, safe and clinically usable intervention for patient populations. The present study should be replicated in a larger sample to confirm the sex-specific differences.

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Paper Session 43: Reducing Risk of Substance Use Behaviors 3:30 PM-3:45 PM

INTEGRATED BIOBEHAVIORAL APPROACH TO IMPROVE ADHERENCE TO PRE-EXPOSURE PROPHYLAXIS AND REDUCE HIV RISK IN PEOPLE WHO USE DRUGS

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To date, HIV prevention efforts have largely relied on singular strategies (e.g., behavioral or biomedical approaches alone) with modest HIV risk reduction outcomes for people who use drugs (PWUD). The bio-behavioral community-friendly health recovery program (CHRP-BB) is an innovative combination HIV prevention approach that we developed in an effort to fill the significant void in primary HIV prevention for high risk PWUD. This study reports the feasibility, acceptability, and preliminary efficacy of the CHRP-BB intervention to improve pre-exposure prophylaxis (PrEP) adherence and HIV-risk reduction behaviors among high-risk PWUD in methadone maintenance program (MMP). We used a within-subjects, pretest-posttest follow-up design to recruit 40 participants between September 2016 and July 2017. Participants were HIV-uninfected, methadone-maintained people who reported HIV-risk behaviors and were currently taking PrEP (n=40). Participants were assessed at baseline (T₀), immediately post-intervention (4 weeks: T₄) and at 1-month post-intervention (T₈). Immediately after completing the four weekly intervention groups, participants underwent a post-intervention assessment including in-depth qualitative interview. Additionally, we administered a one-to-one semi-structured qualitative interview among treatment providers and administrators (n=10) at the MMP to assess overall satisfaction and perceived utility of the intervention with regard to organization-level factors. We assessed feasibility based on participant recruitment and engagement, which was outstanding, with 95% retention. Results showed that participants were highly satisfied and perceived the intervention as valuable and acceptable (mean: 81.3). Significant enhancements in PrEP adherence [F(2,74)=7.500, p=0.001] and PrEP-related knowledge [F(2,74)=3.828, p=0.026] were observed. Drug (e.g., injection of illicit drugs, sharing of injection equipment) and sex-related (number of sexual partners, inconsistent condom use) risk behaviors were significantly reduced. Additionally, significant improvements were also found in HIV risk reduction Information-Motivation-Behavioral Skills model of health behavior change (IMB) constructs, including knowledge, motivation, and behavioral skills. The intervention effect also remained durable from post-intervention to the 1-month follow-up point. The results support feasibility and high acceptability and support further examination of the efficacy of this combination bio-behavioral intervention in a prospective clinical trial.

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Paper Session 43: Reducing Risk of Substance Use Behaviors 3:45 PM-4:00 PM

EXPERIENCES USING PRE-EXPOSURE PROPHYLAXIS FOR HIV PREVENTION AMONG HIGH RISK DRUG USERS

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Introduction: Availability of pre-exposure prophylaxis (PrEP) is emerging as an important tool for curtailing the HIV epidemic and a recommended element of integrated HIV prevention approaches. Despite unequivocal evidence supporting PrEP in the US, its scale-up has been gradual overall, and nearly absent among people who use drugs (PWUD). In the present study, we piloted the implementation of PrEP, as a part of an integrated HIV prevention approach, and explored the experiences and attitudes related to PrEP use among PWUD.

Methods: Between September 2016 and July 2017, we recruited 40 HIV-uninfected, methadone-maintained people, who reported HIV-risk behaviors, and were currently taking PrEP. We conducted both quantitative and in-depth, semi-structured qualitative interviews that primarily focused on experiences, attitudes, acceptability, disclosure status, risk compensation-related attitudes, and barriers related to PrEP adherence. Analyses of quantitative data were performed in SPSS using descriptive statistics, whereas, analysis of qualitative data followed a thematic analysis approach, applying several qualitative data analysis procedures.

Results: Participants were mostly in their mid-40s (mean=44.8 years), male (55.0%), and had been taking PrEP for an average of 36 days. Results showed that participants were highly satisfied and perceived PrEP as valuable and acceptable (mean: 77.7) for HIV prevention. Participants reported high adherence to PrEP with a mean adherence score of 87.6 (Range: 0–100). The most highly endorsed facilitators to PrEP adherence were use of memory aids, no out-of-pocket cost, perceived benefit, and support from social network, whereas the barriers to adherence included side-effects, stigmatization, requirement of daily dosing, and difficulty in accessing PrEP-related services. Additionally, participants expressed disagreement with the overall risk compensation-related attitudes (mean: 16.7, Range: 8–40) and indicated no increment in engagement in risk behaviors while on PrEP.

Conclusion: The results from the current study provide preliminary evidence supporting the successful integration of PrEP within the substance abuse treatment setting, where high risk PWUD are concentrated. Overall, our findings have significant implications for future public health research and for health promotion intervention, practices, and policies for PWUD, particularly in treatment setting.

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Paper Session 43: Reducing Risk of Substance Use Behaviors 4:00 PM-4:15 PM

THE IMPACT OF HIV AND COCAINE USE ON CARDIOVASCULAR RISK

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Objectives: Cardiovascular disease (CVD) is one of the leading causes of death among HIV-infected individuals, and cocaine abuse is a risk factor for sudden CVD death. This preliminary study explored the impact of cocaine (Coc) use on the risk of CVD within the context of both traditional risk factors and HIV specific factors, e.g., immune activation and inflammation.

Methods: Participants (N = 270) were aged 18–50, with no CVD history or symptoms of CVD and not on antiretroviral medication, and were either current cocaine users (HIV-/Coc+; n = 102), HIV-infected individuals (HIV+/Coc-; n = 100), or both (HIV+/Coc+; n = 68). Evaluations included biomarkers of immune activation (interleukin 6 (IL-6)) and inflammation (TNF α), and subclinical atherosclerosis (carotid artery plaques and intima-media thickness; IMT).

Results: Participants' mean age was 37 (SD= 9.63); most (64 %) were African American, 27% were overweight and 41% were obese; 63% were current smokers. Comparing groups, HIV-/Coc+ participants had the lowest incomes and the highest rates of weekly exercise; HIV+/Coc+ were older and had the worst eating habits. IL-6 and TNF α were mean (SD) 1.79 (2.63) and 9.11 (6.92), respectively. Plaques were identified in 28% of participants, and in binomial logistic regression, age (AOR=1.185 [1.121, 1.253], $p = 7.02$, $p = 0.03$), had highest TNF α ($F=19.41$, $pF=37.71$, $pF=6.92$, $p=0.032$). Even when controlling for smoking and body mass, TNF α was highest among HIV+/Coc+ participants (TNF α , $r^2=0.109$, $p=0.002$).

Conclusions: The combination of HIV and cocaine use was associated with a 50% increase in inflammation and plaques, suggesting CVD risk above and beyond that of traditional risk factors, HIV infection or cocaine use alone. Preliminary results suggest that CVD risk associated with HIV infection may be exacerbated by cocaine use, and that clinical recommendations for evaluation of HIV-infected patients' CVD risk should include assessment of biomarkers of inflammation and use of cocaine when appropriate. Future research should examine the risks associated with the clusters of pathology identified among cocaine users, and how they may impact HIV prognosis and mitigation.

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Paper Session 43: Reducing Risk of Substance Use Behaviors 4:15 PM-4:30 PM

DEVELOPMENT AND BETA TESTING OF A PROVIDER-LEVEL MOBILE APPLICATION TO IMPROVE HIV AND ADDICTION TREATMENT

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Background: Treatment retention is a significant public health concern among people living with HIV with less than half receiving consistent HIV medical care. People who use drugs are at increased risk for treatment drop out. This study aimed to develop a mobile platform to promote care coordination across clinic settings with healthcare providers as the primary user. The resulting application was built upon CommCare, the most evidenced based mobile health tool for frontline healthcare workers.

Methods: In-depth qualitative interviews with 29 community clinicians informed initial design of the technology-based platform. Two working groups and six in-depth interviews were conducted with key stakeholders to identify potential barriers to usage, potential high users of the platform, and key features. The prototype is being refined through an iterative process whereby we are beta testing with up to 8 potential users to inform usability, modification and finalization of the digital platform. Beta testing will be completed by October 2017.

Results: A multifunctional app was perceived as useful across provider disciplines. The iCare app comprised 5 major functions: HIV/PrEP and substance use screening, referral to treatment, dual treatment planning and communication, patient education resources, and provider training resources.

Conclusions: Development of provider-level mobile applications has the potential to improve patient care and clinic workflow. These data informed development of the iCare application, which will be deployed for testing in a local HIV clinic and 5 addiction treatment facilities.

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MERITORIOUS AWARD WINNER Paper Session 43: Reducing Risk of Substance Use Behaviors 4:30 PM-4:45 PM

HIV-STIGMA AND DRUG RELATED PROBLEMS AMONG HIV-POSITIVE GAY AND BISEXUAL MEN

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Background: Sexual minority stress and emotion dysregulation are associated with greater psychological distress but less is known about drug-related problems. For HIV-positive gay and bisexual men (GBM), HIV-related stress may serve as a significant source of stress and increase risk of drug-related problems. The present study examined the association between HIV-related stress and drug-related problems in a sample of HIV-positive GBM, as well as the mediating role of emotion dysregulation.

Methods: Data are from the *day2day* study; a sample of 87 HIV-positive GBM from NYC ($M_{age}=39$, $SD=10.27$). Three measures of HIV-related stress were examined: HIV-related discrimination, HIV-disclosure rejection sensitivity, and HIV-concealment. Emotion dysregulation was assessed using the Difficulties with Emotion Regulation Scale. Drug-related problems were assessed using the Short Inventory of Problems for Drug Use. Each form of HIV-related stress was modeled independently on drug related problems with emotion regulation as a mediator. In our final analyses, all three forms of HIV-related stress were modeled on drug related problems with emotion regulation as a mediator.

Results: The majority of the sample identified as men of color; (41.2% Black, 27.1% Latino, 20.0% White, 11.8% Other), 26.4% had full-time employment, 36.8% made more than \$30,000 a year, and 25.3% were in a relationship. Modeled independently and adjusting for sociodemographics, HIV discrimination was positively associated with emotion dysregulation ($\beta=0.40$, $p<.001$) and had an indirect association with drug-related problems through emotion dysregulation ($\beta=0.21$, $p=.001$). HIV rejection sensitivity was positively associated with emotion dysregulation ($\beta=0.30$, $p=.013$) and had an indirect association with drug-related problems through emotion dysregulation ($\beta=0.17$, $p=.015$). HIV concealment was not associated with emotion dysregulation ($\beta=-0.03$, $p=.769$) or drug-related problems ($\beta=0.005$, $p=.958$). In our final model, only a significant indirect effect was observed for HIV discrimination on drug-related problems through emotion dysregulation ($\beta=0.18$, $p=.014$). The final model accounted for 41% of the variance in drug-related problems.

Conclusions: Findings provide evidence of an indirect effect of HIV-related discrimination on drug related problems through emotion regulation. Emotion regulation therapies focus on teaching more elaborative skills for coping with stressors, and skills may be important in managing the emotional impact of stigma-related stressors, including discrimination. Further, our findings suggest that improved emotion regulation abilities may reduce the risk of problematic drug use among GBM who experience stigma-related stress.

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Paper Session 44: Improving the Health of Veterans 3:30 PM-3:45 PM

VETERAN CARE IN THE COMMUNITY: OPPORTUNITIES AND CHALLENGES FOR PAY-FOR-PERFORMANCE

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Background: Pay-for-performance is commonly used in the Veterans Health Administration system, and is expected to be an important strategy to incentivize quality and appropriate utilization as Veteran care moves into the community. We conducted a systematic review and interviewed stakeholders to better understand relevant challenges and opportunities to P4P in community settings.

Methods: We searched PubMed, PsycINFO®, and CINAHL® through March 2017 for studies of pay for performance or implementation factors (eg, performance metrics) targeting Veterans in community care. Two investigators abstracted data and assessed study quality. In addition, we interviewed 17 key informants with extensive P4P research or administrative experience. Using conventional content analysis to guide protocol development, we drafted a semi-structured interview informed by previous themes while also allowing new themes and concepts to emerge.

Results: Six studies examined P4P or related design features or implementation factors in Veteran populations related to community settings. In general, studies found that a number of survey instruments examining cross-system access and coordination exist, that the relationship between access and patient satisfaction varies by measure, that Veterans, providers, and administrators reported Veterans Choice Program (VCP) related challenges such as fragmented care, poor communication and coordination, additional burden on VHA providers, and barriers to sharing medical records, and that there are differences between providers interested in VCP participation and those who are not. Key themes from interviews included targeting areas known to need improvement such as documentation and coordination, the importance of developing relationships with providers and health systems known to provide quality care, and the importance of providing tools to streamline the process. Areas of concern included the small number of Veteran patients per community provider, how funding expanded care in the community might affect Veterans receiving care in VHA settings, and the potential for differences in standards of care (eg, overtreatment).

Discussion: Research guiding the implementation of P4P for Veteran care in community settings is limited. Findings from studies and key informant interviews highlight current challenges and provide recommendations to overcome barriers and ensure quality care for all Veterans.

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Paper Session 44: Improving the Health of Veterans 3:45 PM-4:00 PM

BEHAVIORAL WEIGHT LOSS AND BINGE EATING: SUPPORT FOR A STEPPED CARE MODEL FOR VETERANS WITH OVERWEIGHT/OBESITY WHO BINGE EAT

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Dieting and weight fluctuation are risk factors for eating disorders (EDs), which raises questions about appropriate treatment models and targets for individuals with overweight/obesity who binge eat. There is a scarcity of longitudinal research examining links between weight loss and binge eating during treatment in a stepped care model, especially in mostly male, Veteran samples. The aims of the current analysis were to determine (1) if weight loss during a behavioral weight loss program (VA's MOVE!) is associated with more severe ED symptoms in Veterans who binge eat; (2) if prior weight loss impacts changes in symptoms during and after adjunctive treatment for binge eating; and (3) whether sex is a moderator of this relationship. 90 Veterans (69 male; $M_{age}=57$, $SD=10$) who completed MOVE! reported ED symptoms on the Binge Eating Scale (BES) and Dutch Eating Behavior Questionnaire and were assessed with the Eating Disorder Examination Interview at baseline and at several time points following adjunctive treatments for binge eating. Mean BMI and mean BES scores at baseline for the entire sample were 38.9 kg/m² ($SD=7.6$) and 16.2 ($SD=8.8$), respectively. Mean % weight lost in MOVE! was 2.3% ($SD=4.1$). Regression analyses showed that Veterans who lost more weight had higher dietary restraint on self-report ($p=0.013$) and interview ($p=0.017$) measures. There were no relationships between % weight lost during MOVE! and other ED symptoms at baseline. Mixed effects models supported significant reductions in binge eating symptoms during adjunctive treatment for binge eating regardless of weight lost during MOVE!. Sex was a significant moderator in the weight loss-binge eating relationship during adjunctive treatment for binge eating (p 's=0.003–0.014). In male Veterans, those who lost more weight in MOVE! had less severe binge eating symptoms during and after adjunctive binge eating treatment. Conversely, greater weight loss in female veterans was associated with more severe binge eating symptoms. Thus, among Veterans with overweight/obesity who binge eat, weight loss during a behavioral weight loss program does not appear to be a risk factor for binge eating symptoms or to influence reductions in binge eating symptoms during adjunctive binge eating treatment. However, the association between successful weight loss and binge eating symptoms within a stepped care model is different for female and male Veterans, highlighting the unique needs of these populations.

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Paper Session 44: Improving the Health of Veterans 4:00 PM–4:15 PM

TRANSLATING THE LOOK AHEAD INTENSIVE LIFESTYLE INTERVENTION AMONG UNITED STATES ACTIVE DUTY MILITARY PERSONNEL

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Objective: Although weight directly impacts military readiness, health care costs, and career success, there have been few randomized behavioral weight management trials conducted with military personnel. Thus, the purpose of this study was to compare a translation of the Look AHEAD intensive lifestyle intervention with a self-paced version of the same intervention in this population.

Methods: Healthy active duty military personnel (N=248, 49% male, 34% racial minority) with overweight/obesity were randomized to a 4-month distance- (i.e., phone and email) and individual-based program that was proactive (i.e., counselor-initiated (CI) condition) or reactive (i.e., self-paced (SP) condition). Interventionists were retired military personnel or had extensive familiarity with the military.

Results: In intent-to-treat analyses, the CI condition had significantly greater weight loss at 4-months (CI: $M \pm SD = -3.2 \pm 3.4$ kg vs. SP: -0.6 ± 2.9 kg, $p < 0.0001$) and a significantly greater percent weight loss (CI: $3.5\% \pm 3.8$ vs. SP: $0.6\% \pm 3.1$, $p < 0.0001$). The proportion of participants who lost 5% or more also differed significantly by condition (CI: 29.8%, SP: 10.5%, $p = 0.0002$). Mean abdominal circumference reduction was significantly greater for the CI arm (3.5 ± 6.0 cm) compared to the SP arm (1.2 ± 4.1 cm for the SP arm ($p < 0.0001$)). CI participants completed 12.4 ± 3.6 sessions (out of a possible 16); only 2 SP participants each requested one session by the 4-month visit. CI participants self-monitored dietary intake and physical activity using the LoseIt app on 66.7 ± 26.5 days (out of a possible 120 days) compared to SP participants who self-monitored on 21.3 ± 40.2 days ($p < 0.0001$). CI participants weighed themselves on a Body Traceelectronic scale on 88.5 ± 27.8 days compared to 55.3 ± 33.0 days for SP participants ($p < 0.0001$). CI participants consumed 38.6 ± 35.0 of the provided meal replacements (out of a possible 360 meal replacements). In analyses examining only those in the CI condition, there were no significant differences in percent weight loss by gender, race, ethnicity, education level, marital status, age category, or military grade.

Conclusions: The CI behavioral weight loss intervention translated from Look AHEAD offers a promising approach for managing weight in an active duty military population.

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Paper Session 44: Improving the Health of Veterans 4:15 PM–4:30 PM

EVALUATING TREATMENT FIDELITY USING THE BEHAVIORAL CHANGE CONSORTIUM FRAMEWORK IN THE PATRIOT RANDOMIZED CLINICAL TRIAL (RCT)

Lauren Wash, M.A.¹, Kyle Folterman, Master of Social Work², Sangmin Hyoung, Ed.M.³, Maria Pelosi, M.S.Ed.⁴, Maria Antonia Rodriguez, Ph.D.¹, Sarah R. Sullivan, M.S.Ed.⁵, Sundar Natarajan, MD., MSc.¹

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Background: Behavioral research relies on treatment fidelity to ensure the reliability and validity of a proposed intervention. The NIH Behavior Change Consortium Treatment Fidelity Workgroup (BCC) conceptualized a framework for treatment fidelity implementation focusing on five domains. The framework provides subdomains and recommended strategies to fulfill each subdomain.

Purpose: Our goals were to: 1) develop a treatment fidelity metric using the BCC framework, and 2) evaluate how our PATRIOT intervention met the BCC recommendations using this metric.

Methods: PATRIOT is a RCT aimed at primary prevention of foot lesions in Veterans with diabetes using a telephone-based behavioral intervention. We compared each BCC strategy with our current practices. Aspects of the BCC recommendations were refined to be applicable for telephone-based interactions. Interventionists and supervisors individually scored our current practices based on the extent to which each BCC strategy is utilized using a 5-point Likert scale: 1-Poor, 2-Fair, 3-Average, 4-Good, 5-Excellent. Averages of ratings were taken for each strategy to present final point estimates showing how our practices meet the BCC strategies.

Results: Results are the average ratings of five individuals with knowledge of the intervention. Our ratings using the BCC framework are: 1) *Study Design*: a) treatment dose within condition – 4.74/5, b) equivalent dose across conditions – 4.62/5, c) Plan for implementation setbacks – 4.75/5; 2) *Training Providers*: a) standardize training – 4.53/5, b) ensure skill acquisition – 4.44/5, c) Minimize “drift” in skills – 4.13/5, d) Accommodate differences – 4.48/5; 3) *Treatment Delivery*: a) Control for provider differences – 4.83/5, b) Reduce differences within treatment – 4.87/5; c) Ensure adherence to treatment protocol – 4.83/5, d) Minimize contamination – 4.89/5; 4) *Treatment Receipt*: a) Ensure participant comprehension – 4.93/5, b) Ensure participant ability (cognitive skills) – 4.95/5, c) Ensure participant ability (behavioral skills) – 4.86; and; 5) *Enactment of Treatment Skills*: a) Use of cognitive skills – 4.93/5, b) Use of behavioral skills – 4.97/5.

Conclusion: The ratings using the BCC framework showed high treatment fidelity ratings. All ratings ranged from good to excellent. This approach has potential to provide a standard metric to evaluate treatment fidelity in telephone-based behavioral interventions.

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Paper Session 44: Improving the Health of Veterans 4:30 PM-4:45 PM

PATIENT PERCEPTIONS OF MULTI-MORBIDITY

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Patterns of multiple, chronic conditions (multimorbidity, MM) and functional status may influence a paradigm shift in the care of older adults, focusing on the complex interplay rather than on individual diseases. Patient perceptions of MM have implications for treatment, education, self-management, and resource utilization. Goals of this study are to describe patterns of MM and functional status among geriatric outpatients and gather pilot data on perceptions of MM.

Methods: Mixed methods are used to conduct interviews with a convenience sample of patients > 65 years attending appointments at a VA Primary Care Clinic. Measures include the Mini-Cog, Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), Self-Assessed Health (SAH), Short Physical Performance Battery (SPPB), and a semi-structured interview of illness perceptions. Medical records are reviewed for MM, and prospectively over 3 years for healthcare utilization.

Results: To date 81 subjects (77.7 ± 8.9 years; range 65–93) have been interviewed. Mean number of conditions is 16.6 ± 7.1 ; most common ($\geq 25\%$ of subjects) are hypertension, hyperlipidemia, diabetes, and heart disease. 18.8% screened positive for dementia. Self-report ADL was $5.7 + 0.6$ (range 0–6), and IADL $6.5 + 1.6$ (range 0–8). Objective function by SPPB was $7.1 + 3.2$ (range 0–12). The 35% who rated SAH poor-fair had significantly more MM ($19.4 + 6.4$) vs. those rating SAH as good-very good by 65% ($15.2 + 7.1$, $t=2.6$, $p < .05$). Qualitative interviews revealed 77% think of their MM as individual conditions, with little-no interrelatedness. About 62% of the group could name 2 or more of their chronic conditions, while 38% named one or none.

Conclusions: The study population has a high burden of MM. Although tending to report high function (ADL and IADL), actual performance on the SPPB suggests greater impairment. Those rating SAH as poor-fair had a greater burden of MM. Most patients perceive conditions as occurring independently, and are more aware of symptoms that affect their daily life (e.g. pain, shortness of breath).

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Symposium 63

3:30 PM-4:45 PM

CRITICISMS OF AND ALTERNATIVES TO DSM-5: IMPLICATIONS FOR BEHAVIORAL MEDICINE

Edwin B. Fisher, Ph.D.¹, Allan Horwitz, Ph.D.², Jeffrey S. Gonzalez, PhD³, Edwin B. Fisher, Ph.D.¹, Elaine F. Walker, Ph.D.⁴

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The Diagnostic and Statistical Manual, Version 5 (DSM-5) of the American Psychiatric Association and its predecessors have gained considerable dominance regarding the characterization and diagnosis of mental disorders or mental illness. Criticism however has noted a number of issues: 1) Overlap – 50% of those meeting one diagnosis also meet another. 2) Amorphous categories – e.g., two people can both be diagnosed with Major Depressive Disorder with only 1 out of 9 features in common. 3) Reification and tautology – in most cases, there are no identifiable diseases other than the cluster of symptoms defining them; there is no depression or schizophrenia to treat other than the symptoms that comprise depression and schizophrenia. 4) Assumption that disorders are fundamentally biological relative to a variety of socioecologic and psychological determinants. This is naïve vis a vis extensive evidence that early and later experience influences neurobiology so that neurobiology may best be seen as the mediator of environmental effects on behavior, rather than some immutable basis for psychopathology. This symposium will explore emerging criticisms of DSM-5 and alternatives to it. Employing a sociological perspective, Allan Horwitz will describe the symptom-based diagnostic character of DSMs 3–5 including the diverse professional, cultural, and economic influences that encouraged their development and popularity. This raises questions then regarding the adequacy of such symptom-based models to capture and reflect the broad range of psychic ills that comprise “mental illness.” Jeffrey Gonzalez will describe a key example of problems with DSM-5’s broad categories in the confusion of clinical depression with distress associated with diabetes. This has led to large numbers of false positives, excessive and misapplied treatments, failure to develop treatments reflecting the range of problems associated with diabetes distress and depression, stress on available care, and limited availability of care. Edwin Fisher will then describe an alternative to DSM-5 focusing on problem behavior patterns (e.g., suicide, reduced frequency of previously rewarding behavior, difficulty integrating contextual cues in guiding behavior, hypersensitivity to slights, labile attachments), interventions specific to them, and their practical advantages in behavioral medicine and other clinical settings. Elaine Walker, the discussant, has made major contributions to understanding the developmental, psychological, and biological determinants of psychosis from neonatal development through prodromal phases. Her perspective highlights the multiple determinants of mental disorders and provides a vantage point for examining problems with DSM-5 as well as alternatives and their implications for mental as well as general health and well being.

Symposium 63A

THE DSM, DEPRESSION, AND ANXIETY: A SOCIOLOGIST’S PERSPECTIVE

Dr. Allan Horwitz, Ph.D.

Psychiatric diagnoses often reflect a matrix of sociological factors associated with professional prestige, economic forces, and cultural fashions. Diagnostic systems conceptualize the same underlying psychosocial problems in very different ways during various time periods. Since the publication of the *Diagnostic and Statistical Manual (DSM-III)* in 1980, psychological distress resulting from social circumstances and life threats such as health threats that previously were viewed as general problems of nerves, neuroses, and anxiety was transformed into the specific diagnoses of Major Depressive Disorder and a variety of specific anxiety conditions. Several factors including the contrasting ways that the DSM-III defined anxiety and depression, the necessity to use explicit diagnoses to obtain professional legitimacy and reimbursement for services, and the marketing practices of the pharmaceutical industry account for why depression replaced anxiety as the diagnosis most suitable for treated mental health conditions.

In general, the *DSM-5* (2013) exacerbated rather than improved the weaknesses of symptom-based diagnostic models. Beneath the changing veneer of psychiatric labels, however, lie the same mélange of psychic ills that resist the precise labels that current classificatory fashions strive to impose upon them. Regardless of labels and categories, however, the problems of psychological distress they encompass are important issues that emerge frequently in the prevention and management of health problems and patient care. Nevertheless, major questions remain over whether symptom-based categorizations of diverse psychic ills illuminate or obscure problems, how they impact general health, and if they provide the optimal approaches to ameliorate psychic distress.

Symposium 63B

PROBLEMS WITH ROUTINE SCREENING FOR DEPRESSION IN DIABETES: OVERDIAGNOSIS AND MISMATCHED CARE

Dr. Jeffrey S. Gonzalez, PhD

A large body of research documents increased risk for depression among individuals living with diabetes and links depression to problems with self-management, hyperglycemia and poor health outcomes. Based on these relationships, a number of expert recommendations have called for routine screening for depression in diabetes in order to identify cases and initiate treatment, with the reasonable expectation that doing so would improve diabetes health outcomes. However, a critical examination of the evidence base exposes two significant areas of concern. First, although most studies of depression in diabetes aim to identify cases of major depressive disorder (MDD), as defined by the Diagnostic and Statistical Manual of the American Psychiatric Association, they use crude self-report measures to identify cases. These measures produce a high number of false-positives and introduce considerable heterogeneity into the research literature informing these recommendations. A growing body of evidence suggests that non-pathological emotional distress secondary to the burdens of living with diabetes and its demanding management, or diabetes distress, is often misidentified as depression. Diabetes distress is also more common, more chronic and more closely related to problematic diabetes self-management and hyperglycemia than MDD. These distinct constructs require different approaches to intervention. Second, routine depression screening will require considerable resources to differentiate the large number of false-positive cases from the smaller number of true-positives. This would result in increased demands on an already overburdened mental health system that cannot be met by existing capacity. Evidence shows that routine depression screening leads to over-diagnosis and over-treatment with antidepressants, which are associated with side effects that are particularly problematic for individuals with diabetes (e.g., weight gain) and are mismatched with patient preferences. A 'tick-the-box' approach to depression screening in diabetes may seem to be responsive to the research evidence and expert recommendations but nevertheless will likely be insufficient to address the problem of emotional distress in individuals living with diabetes. Patient-centered diabetes care should be more sensitive to the context that explains emotional distress in conceptualizing the problem and in identifying appropriate interventions.

Symposium 63C

CRITICISMS OF DSM-5 AND ALTERNATIVES FOCUSING ON PROBLEMS RATHER THAN CATEGORIES

Dr. Edwin B. Fisher, Ph.D.

Alternatives to the amorphous and overlapping categories of DSM-5 have included statistical analyses of broad underlying dimension such as extraversion, neuroticism, or positive affect. These may account for substantial variance in clinical manifestations but provide little guidance to treatment, unless, e.g., interventions are developed to treat extraversion or neuroticism. A second direction entails specifying "endophenotypes" or specific behaviors according to "Research Domain Criteria." Although intentionally more specific than the DSM-5 categories, these are still seen as steps to improve articulation of those categories. They also retain the assumption that fundamental causes are biological. An alternative is to focus on problematic behavior patterns not as indicators of DSM-5 categories but of interest in their own right along with their diverse social, economic, and psychological, as well as biological determinants. Suicide, often viewed as an expression of depression, is a good example. It is a major problem with yearly worldwide mortality of about 800,000 (cf., yearly HIV mortality of 1,100,000). Its determinants include depressed mood and hopelessness but also anxiety, antisocial and violent behavior patterns, and educational/economic disadvantage. Thus, suicide may be viewed as a problem in its own right not just in connection to depression. Other problematic behavior patterns include patterns related to anxiety (e.g., amorphous fears, post-traumatic distress), patterns related to mood (e.g., sleep disturbance, reduced frequency of previously rewarding behavior), patterns affecting coherence of behavior and its contexts (e.g., difficulty integrating contextual cues in guiding behavior), patterns related to impulse control (e.g., steep discounting of delayed consequences), or patterns related to relationships (e.g., suspiciousness, hypersensitivity to slights, labile attachments). Supporting this approach, the majority of evidence-based psychological interventions address specific problems rather than broad categories, e.g., studies of problem solving interventions in low and middle-income countries that reduce a number of mental health problems. Implications for behavioral medicine are substantial. Problem solving in mental health overlaps considerably with the problem solving in chronic disease management, facilitating its incorporation within clinical and chronic disease care. Interventions focused on specific problems such as disease-related distress, problems integrating complex cues or hypersensitivity to criticism that interfere with patient-provider relationships, or reduced frequency of previously rewarding behavior that reduces adherence to treatment plans may have greater practicality in prevention and clinical settings than treatment plans for the broad categories of DSM-5.

Friday
April 13, 2018
6:15 PM-7:15 PM

C001

6:15 PM-7:15 PM

A NATIONAL PROFILE OF MENTAL HEALTH AND SUPPORT SERVICE NEED AMONG FAMILY CAREGIVERS OF ADULTS WITH CANCER IN THE U.S.

Erin E. Kent, PhD, MS¹, James Dionne-Odom, PhD, MA, RN²

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Objective: To examine association between caregiving intensity and mental health among U.S. cancer caregivers and potential moderation by caregivers' unmet support service needs.

Methods: Analysis of Center for Disease Control 2015 Behavioral Risk Factors Surveillance System self-reported survey data from 18 U.S. states (N=1574 cancer caregivers). Caregiving intensity included the hours/week caregiving (high hours > 20, low hours ≤ 20) and caregiving duration (high duration > 2 years, short duration ≤ 2 years). Mental health was reported as the number of "mentally unhealthy days" (MUD) in the past 30. Support service needs included: caregiving classes, help getting service access, support groups, counseling, and respite care. Multivariable linear regression adjusting for sociodemographics and sampling weights modeled MUDs regressed on unmet support service needs and caregiving intensity.

Results: 122 (8.3%) cancer caregivers reported caregiving for high hours/high duration, 213 (13.1%) high hours/short duration, 329 (18.4%) low hours/long duration, and 910 (60.2%) low hours/short duration. Most caregivers were female (67%), younger than 55 (66%), non-Hispanic white (71%), and employed (61%). Mean MUDs was 6 (SE=0.5). The highest reported unmet support service needs were help with service access (48.4%) and counseling (15.6%). Higher caregiving intensity and support service need endorsement were both associated with higher MUDs (*p*

Discussion: High intensity cancer caregiving was associated with poor mental health, especially for those reporting support service needs. Having supportive service needs met may result in greatly reducing MUDs. Prioritizing the development of national strategies to optimize assessment and provision of support services for high intensity cancer caregivers is strongly warranted.

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C002

6:15 PM-7:15 PM

DOES EXPERIENCING SIDE EFFECTS OF ACUTE MYELOID LEUKEMIA TREATMENT WORRY PATIENTS AND CAREGIVERS? RESULTS OF A NATIONAL SURVEY

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Background: Treatment for Acute Myeloid Leukemia (AML) is often aggressive and plagued by short- and long-term side effects. While AML treatment side effects create both physical and emotional burden, worry specifically regarding side effects has not been previously explored. We sought to examine whether experiencing short- or long-term side effects of AML treatment impacted patient and caregiver worries about these side effects.

Methods: We recruited AML patients and caregivers through a national advocacy organization in the US. Participants completed an online survey documenting patients' experience with treatment-related side effects and prioritized 13 AML-related worries using best-worst scaling (BWS). Composite short- and long-term experience scores that reflected number of side effects experienced and severity of side effects (range 0 - 3, lowest to highest) were created. Differences in side effect among patients and caregivers were analyzed using t-tests. Regression models explored the effect of predictors (short-term and long-term side effect experiences score) on 1) BWS of short-worries, and, 2) BWS of long-term worries.

Results: Participants were predominately over 50, white, married, college-educated, and privately insured. Caregivers (n=282) reported higher long-term side effects than patients (1.42 vs. 1.07 n=905; $p < 0.001$), but reported similar short-term side effects (1.88 vs. 1.78 $p = 0.052$). Long-term side effects were the second most concerning worry for patients (BWS=70.6) and caregivers (BWS=63.2) after the possibility of dying. Short-term side effects were less worrisome to patients (BWS=48.1) and caregivers (BWS=46.7). Experiencing more long-term side effects was predictive of being less worried about short-term side effects for patients ($p = 0.040$) and caregivers ($p < 0.001$). Among patients, experiencing long-term side effects was positively associated with worrying about long-term side effects ($p = 0.007$). Among caregivers, experiencing short-term side effects was positively associated with worrying about long-term side effects ($p = 0.042$).

Conclusion: Experiencing long-term treatment side effects assuaged worry about short-term side effects for both patients and caregivers, however what predicted worry about long-term side effects varied. These results offer an important foundation to consider how the lived treatment experiences of patients and caregivers impacts worries, which in turn may influence health behaviors and treatment decisions.

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C003

6:15 PM-7:15 PM

FACTORS CONTRIBUTING TO MISCARRIED HELPING AMONG PARENTS OF CHILDREN WITH CANCER

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Objective. Miscarried helping is a maladaptive process characterized by ineffective communication by well-intentioned parents of children with chronic illnesses. Research suggests miscarried helping contributes to sub-optimal treatment outcomes across diabetic (Harris et al., 2008) and chronic pain samples (Fales, et al., 2014). This study sought to examine the influence of parent-reported child physical and emotional functioning, and parental depression and anxiety on miscarried helping in children with oncologic disorders.

Method. Primary caregivers ($N = 132$), ages 25 - 57 ($M = 41.16$, $SD = 7.05$), of pediatric cancer patients, ages 3 - 17 ($M = 9.80$, $SD = 4.64$), completed an online survey. Caregivers reported on their child's physical and emotional functioning using the PedsQLTM, their own depressive and anxious symptoms using the PHQ-4 (Kroenke, et al., 2009), and their miscarried helping using the Helping for Health Inventory (HHI; Harris et al., 2008). Data analyses included bivariate correlations and hierarchical regression analysis.

Results. Miscarried helping was unrelated to child age at diagnosis, caregiver age, or perceived prognosis. Miscarried helping was then hierarchically regressed onto conceptually relevant variables based on bivariate correlations ($p \leq .05$). The first block, consisting of parental report of child physical and emotional functioning, accounted for 12% of the variance in miscarried helping, $F(2, 129) = 10.08$, $p < .001$. Parental report of worse child emotional functioning was the only significant predictor ($\beta = -.39$). The second block, consisting of parental self-reported anxiety and depression, significantly improved the model ($R^2\Delta = .13$). In the final model (Adjusted $R^2 = .26$, $F(4, 127) = 11.39$, $p < .001$), significant predictors were parent-reported poorer child emotional functioning ($\beta = -.27$) and greater parental anxiety ($\beta = .29$).

Discussion. These results extend previous research in chronic pain samples indicating child depression is related to miscarried helping (Fales et al.). Moreover, these results suggest that in the context of oncologic diagnoses and treatment, miscarried helping may be partially driven by greater parental anxiety and parental perceptions of worse child emotional functioning, rather than their perceptions of child physical functioning. Therefore, to intervene on miscarried helping, clinicians should target child emotional functioning and parental anxiety and reactivity to child emotional responses.

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C004

6:15 PM-7:15 PM

HPV VACCINE UPTAKE AND COMPLETION IN LATINO ADOLESCENTS: THE INFLUENCE OF CLINIC TYPE AND AGE

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Introduction: The human papillomavirus (HPV) vaccine prevents types of HPV linked to genital warts and certain cancers. It is approved for use in females and males aged 9–26. In 2015, 41% of Latino females and 36% of Latino males aged 13–15, completed the vaccine series. These rates are far below the Healthy People 2020 goal of 80% coverage. Little is known about how clinic type (public/non-profit vs. private) and age of the adolescent may influence vaccine series initiation and completion in this population. To address this gap, we examined whether the type of clinic mothers reported as their child's usual source of care (public/non-profit vs. private) and adolescent's age, were associated with HPV vaccine series initiation and completion.

Methods: Data were collected as part of a larger study to identify factors related to Spanish-speaking Hispanic mother's decision to vaccinate their children (aged 10–17) against HPV. Mothers (N=332) completed a baseline survey and at six months post-baseline, a follow-up phone survey and a medical record review were conducted to determine the child's vaccination status. Participants were compensated for their participation (\$20 at baseline and \$15 at follow up). Descriptive and multivariate logistic regression analyses were conducted using SPSS version 23.0 (IBM, Armonk, NY). We tested two separate multivariate logistic regression models. The first model regressed HPV vaccine series initiation (no vs. yes) on clinic type (public/non-profit vs. private) and the adolescent's age (9–10 years; recommended age: 11–12 years; and 13–17 years) while controlling for mother's age (≤ 39 vs ≥ 40), education level (< high school diploma vs. high school diploma) number of years in the US, and child's gender. The second model regressed HPV vaccine series completion on the same variables.

Results: We observed that having a public/non-profit clinic vs. a private clinic as a usual source of care was associated with a higher likelihood to *initiate* the HPV vaccine series. Further, children who were in the 9–10 year age group (i.e., pre-recommendation age range) at baseline, were less likely than those in the recommended age group (11–12 years) to have initiated the series at follow up. In the second model, having a public/non-profit clinic vs. a private clinic as a usual source of care was associated with a higher likelihood of vaccine series *completion*.

Discussion: Our findings indicate that age of the child influences initiation of the series, but not completion. Further, the type of clinic that adolescents attend, influences HPV vaccine series initiation and completion. Our results indicate a need to increase HPV vaccine initiation and completion rates among Latino adolescents attending private clinics. This may be best accomplished through intervening with both health care providers and mothers.

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C005

6:15 PM-7:15 PM

INTERACTIVE PATIENT-CENTERED WEBSITE TO PREVENT DYSPHAGIA IN IRRADIATED PHARYNGEAL CANCER PATIENTS

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Purpose: To provide evidence-based preventive speech pathology services (evaluations and swallowing exercises) and an effective adherence program via a mobile health technology application to head and neck cancer patients during radiation.

Methods: We developed a responsive web-based application program to help patients adhere to preventive swallowing exercises and cope with radiation side effects. The website (English and Spanish) features tracking logs for weight loss, trismus and swallowing exercises, how-to-videos, patient's stories and all-inclusive search bar. Participants at community outpatient clinics based in Fort Worth and Galveston, TX are taught how to log in and navigate the secure interactive website before radiation and are given access to new weekly modules every week for 10 weeks.

Results: One hundred and twelve patients have been enrolled into the prevention program; 52 who received a non-interactive pilot version of the web-based program and 60 who have received the full-scale interactive program. Accrual rates are approximately 95%, with the most common reason for refusal is dislike of a computer-based platform. Approximately 38% of the enrolled patients are either uninsured or low-SES patients. Fifteen mobile tablets with monthly data plans have been distributed to patients without access to computers or smartphones. All 112 patients have received preventive and diagnostic speech pathology services, including fiberoptic endoscopic swallowing tests (FEES). Of the 60 patients who have been enrolled onto our full-scale interactive website, 75% have logged in at least once and over 50% log in regularly throughout the course of their radiation; each visit to the website averages 7 min 38 sec and 8.2 different actions (page views, downloads, searches). Most participants are viewing the swallowing and trismus exercise videos, the cooking demonstrations, and "what to expect this week." Patients have rated the program highly on helpfulness in coping with radiation side effects and with adhering to swallowing and trismus exercises.

Conclusion: Head and neck cancer patients are highly satisfied with technology-based intervention designed to help them cope with radiation side effects and prevent long-term swallowing dysfunction.

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C006

6:15 PM-7:15 PM

INTRUSIVE THOUGHTS AND FACILITY OF GOAL ATTAINMENT IN YOUNG ADULT TESTICULAR CANCER SURVIVORS: THE ROLE OF GOAL DISENGAGEMENT.

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Background: The diagnosis of testicular cancer during young adulthood can slow or change the course of development, rendering meaningful goals unobtainable. However, the psychosocial predictors of goal attainment have yet to be identified. Individuals who can disengage from unobtainable goals are more likely to experience better psychosocial adjustment, as they can redirect their focus towards more feasible goals. The ability to shift one's focus away from unobtainable goals may be an important moderator of intrusive thoughts about a situational stressor. Disengagement may be particularly important in the presence of intrusive cognitions about cancer. Intrusive thoughts may result in increased perception of goals as unobtainable, thus negatively affecting adjustment.

Objectives: To examine the relationships between intrusive symptoms, goal facility (perceived attainability of goals), and dispositional goal disengagement in young adult testicular cancer survivors.

Research Design: 171 young adult (ages 18–29) testicular cancer survivors were recruited via a state cancer registry and completed measures of cancer-related intrusive thoughts (IES-R), goal facility (CAYA-T), and goal disengagement (GAS).

Results: Multiple regression analyses (controlling for income, education, employment status, physical well-being, and history of either anxiety or depressive disorder) did not reveal a significant main effect of intrusive thoughts ($\beta=-0.43$, $p<0.10$) or goal disengagement ($\beta=0.10$, $p=0.23$) on goal facility. However, the relationship between cancer-related intrusive thoughts and goal facility was moderated by goal disengagement ($\beta=-0.54$, $p<0.05$) such that those with high goal disengagement and more intrusive thoughts reported relatively low goal facility.

Conclusions: The interaction effect of goal disengagement and intrusive thoughts suggests that goal disengagement might be an ineffective strategy to regulate emotions when cancer-related distress is heightened. Although more research is necessary, this result suggests that young adult survivors, particularly those experiencing mild to moderate distress, might benefit from an intervention that facilitates goal navigation skills.

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C007

6:15 PM-7:15 PM

RELATIONSHIPS AMONG AFFECT, MEMORY, PERCEPTIONS, AND MOBILITY IN OLDER ADULTS WITH CANCER

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The average age of cancer survivors in the United States is 67, with 60% being over 65 years old. Researchers have identified cognitive and affective impairments as common sequelae among older adult cancer survivors, however considerable variability exists in the measures used to assess these factors, and in the efficacy of available treatments. Herein, we aimed to test a comprehensive measurement model to better understand cognitive and affective functioning in older cancer survivors, and potential focal points for behavioral interventions. Survey data was collected from the National Health and Aging Trends Study-2016 ($n=5714$; 21.5% of sample excluded due to missing responses on all target variables). The sample was primarily White/non-Hispanic (72%), female (57%) and without (94%) cancer diagnosis ($n=327$). Memory (assessed via Immediate and Delayed Word Recall, and Clock drawing), affect (3 questions from the Health Conditions scale), lower-body mobility (*Short Physical Performance Battery* [SPPB]) and perceptions of memory ability ("how would you rate your memory at the present time"), along with demographics (age, gender, race) and cancerDx were analyzed using structural equation modeling (Mplus v.7). Data were assumed to be missing at random, and weighted least squares maximum likelihood estimation was used. Using affect and memory as latent constructs (regressed on age, gender, race and cancerDx) the model fit the data (χ^2 (df=23) = 102.27, $p<.01$, CFI = .99, TLI = .99, RMSEA = .03, SRMR = .01). Results revealed older, minority women, with a cancer diagnosis were more likely to show greater negative affect and poorer memory. Upon adding perceived memory ability and SPPB to the model (χ^2 (df=23) = 102.27, $pp<.01$, CFI = .99, TLI = .99, RMSEA = .02, SRMR = .01) results revealed a similar pattern; however, the effect of cancer on memory was attenuated and no longer significant. The findings from our study replicate and extend the literature, as we modeled multiple cognitive and affective outcomes in a latent variable framework and this suggests functioning may be lower irrespective of assessment used. Also, lower-body functioning and beliefs in one's memory are malleable, and therefore potential areas of focus for interventions. Together, these findings suggest that physical activity interventions and memory training or gain-framing ("with age comes wisdom") could be important components of any future intervention designed to off-set the effects of aging and cancer on cognition, or to independently optimize affective states.

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C008

6:15 PM-7:15 PM

5-WK STRESS MANAGEMENT INTERVENTIONS DECREASE LEUKOCYTE INFLAMMATORY SIGNALING IN DISTRESSED BREAST CANCER PATIENTS

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INTRODUCTION. A 10-wk group cognitive behavioral stress management (CBSM) intervention showed decreases in distress and leukocyte pro-inflammatory gene expression in breast cancer (BCa) patients over 12 months. CBSM effects were strongest in women presenting with elevated cancer-specific distress. We next showed that 5-wk interventions featuring CBSM components—cognitive behavioral therapy (CBT) or relaxation training (RT)—decrease distress during BCa treatment. Here we examine whether these brief approaches reduce inflammatory signaling among those with elevated cancer-specific distress. **METHODS.** We identified 49 women who participated in the trial of these 5-week interventions and who reported elevated cancer-specific distress on the Impact of Events Scale-Intrusive Thoughts (5wk CBT=23, 5wk RT=13, 5wk Health Education [HE]=13). Cryopreserved blood samples obtained at baseline (4–8 wks post-surgery and before adjuvant therapy) and 12-month follow-up were used for nuclear protein extraction and determination of Nuclear Factor Kappa-B (NFκB) DNA binding by electrophoretic mobility shift assay. Samples were electrophoresed and dried gels were exposed to Kodak x-ray films, scanned and analyzed for integrated areas under the densitometric curves.

RESULTS. Women assigned to the 3 study conditions showed no differences in sociodemographics, disease characteristics or treatments received. Women in either stress management condition (RT or CBT) showed decreases in NFκB expression over 12-months vs those in HE, after controlling for age, stage, time since surgery and adjuvant treatments received ($F = 4.66, p = .037$). Group differences in change were largest between the CBT condition and the HE condition ($F = 5.25, p = .029$). Lower levels of cancer-specific distress at 12-months were associated with lower NFκB expression, in CBT ($r = .44$) and RT ($r = .62$) but not in HE.

CONCLUSION. Brief stress management appears to down-regulate expression of the NFκB nuclear protein—a key upstream regulator of DNA transcription and inflammatory cytokine production. Thus we have identified a mechanism for decreasing inflammation with CBSM which we have previously shown contributes to better survival in breast cancer patients.

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C009

6:15 PM-7:15 PM

ADHERENCE TO SURVEILLANCE GUIDELINES AMONG LATINA BREAST CANCER SURVIVORS

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The American Society of Clinical Oncology (ASCO) developed evidence-based guidelines for post-treatment breast cancer surveillance that include routine mammography, physical examination, pelvic exam/Pap test, and breast self-exam. Past work has identified lower rates of post-treatment surveillance among racial/ethnic minority breast cancer survivors, and Latina survivors may face distinct barriers to adherence to clinical guidelines, including language barriers, access to healthcare, mistrust of medical professionals, lack of knowledge about recurrence and surveillance, and cultural values like familism (strong feelings of loyalty and obligation towards family members) or fatalism (a belief that cancer cannot be prevented or controlled). Determining which of these contributes to Latina survivors' surveillance behavior is necessary to the development of effective interventions aimed at increasing adherence in this underserved population. The current study focused on testing associations between the constructs listed above and adherence to post-treatment surveillance among 169 Latina breast cancer survivors in the metro Detroit and New York City areas. Survivors were between three months and four years post-treatment. Adherence to surveillance guidelines was conservatively operationalized as the proportion of recommended tests (i.e., mammogram, physical exam, pelvic exam, breast self exam) received at least once since completing cancer treatment. A majority (62%) of Latina survivors reported having performed all four tests at least once. An ordinal regression analysis controlling for demographic predictors (i.e., study site, age, education) found that adherence to surveillance guidelines was associated only with survivors' knowledge of breast cancer recurrence and surveillance ($\beta = .04, p = .006$). Neither preferred language, access to healthcare, mistrust, familism, nor fatalism was significantly related to adherence (all p 's $> .05$). These data suggest that efforts to increase adherence to surveillance guidelines among Latina survivors must focus on making information about recurrence and surveillance available and accessible to members of this patient population.

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C010

6:15 PM-7:15 PM

AFFECTIVE, COGNITIVE, AND BEHAVIORAL FACTORS IN TREATMENT DECISIONS AFTER RECEIVING BRCA 1/2 GENETIC TESTING RESULTS

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The purpose of this study is to understand the extent to which emotional and situational factors influence a woman's decision to have a unilateral or a contralateral prophylactic mastectomy (CPM) versus a less-invasive treatment option such as breast-conserving surgery (lumpectomy) or to use active surveillance (no medical treatment). Research shows that the BRCA 1/2 genetic testing process can be an emotionally-salient experience that influences women's treatment decisions, especially if the result is positive for the genetic mutation. In the past 25 years, the incidence of mastectomies has increased even though survival rates among women who have a unilateral or CPM versus breast-conserving surgery (lumpectomy) (especially for DCIS) are not significantly different. That is, having a mastectomy may not confer the outcome a woman hopes for, especially in the light of the many adverse effects (e.g., scars, changes in body image, delay of adjuvant treatment, surgical infection) caused by mastectomies. All subjects in the study were recruited from cancer support groups in South Florida, had breast cancer, and received negative BRCA1/2 results. Measures used were The Hospital Anxiety and Depression Scale (HADS), Psychosocial Aspects of Hereditary Cancer (PAHC) Questionnaire, and a survey consisting of questions pertaining to demographic information and details related to treatment choices. Results ($N=10$) were not statistically significant but showed that women who were younger and who reported higher levels of anxiety were more likely to choose a unilateral mastectomy or CPM versus a less-invasive treatment option such as breast-conserving surgery (lumpectomy) or to use active surveillance (no medical treatment). Additionally, our results suggest / indicate that women with a negative BRCA 1/2 genetic test result tend to choose a more invasive surgical treatment when they do not feel distress related to the BRCA test result, believe that genetics cause breast cancer, and feel guilty and/or fearful that they might pass the BRCA gene to their children. Considering the increasing numbers of breast cancer diagnosis annually world-wide, it is becoming even more important to understand the emotional and cognitive factors that lead to treatment decisions for breast cancer.

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C011

6:15 PM-7:15 PM

ANXIETY, DEPRESSION, BODY IMAGE AND TANNING IN A COHORT OF 17–18 YEAR OLDS

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BACKGROUND: Tanning, especially indoors, is an important risk behavior for skin cancer, and occurs at high rates among teens and young adults. We examined tanning, anxiety, depression, and body image concerns in a cohort born in 1998, currently age 17–18, for which we have collected longitudinal data on sun exposure and risk factors for skin cancer for at least 12 years (the “Colorado Kids Sun Care Program”). Some members of the cohort received previous skin cancer prevention interventions, but they have been followed since 2007 without any intervention.

METHODS: The online survey was conducted between May and August, 2016. Anxiety was measured using a 9-item inventory and depression was measured by a 7-item scale.

RESULTS: Responses were received from 361 respondents (response rate=51%), equally split between males and females. Females were significantly more likely than males to engage in both indoor tanning (10% vs. 1%; $p<.001$) and outdoor tanning (42% vs. 13%; $p<.001$). Signs of anxiety and/or depression were prevalent in this cohort (34%), many of whom completed the survey around the time of their high school graduation, which may be a particularly stressful time. Females were significantly more likely than males to show signs of anxiety and/or depression (42% vs. 22%; $p<.001$). There was some evidence of a relationship between anxiety and indoor tanning ($F=2.61$; $p=.11$) and between depression and indoor tanning ($F=3.84$; $p=.051$), but there was no apparent relationship between outdoor tanning and anxiety or depression. Indoor tanners were less likely to be satisfied with their weight ($p=.03$) and their appearance ($p=.055$), more likely to report that it is important to their friends that they are thin ($p<.001$), and among females, more likely to report that they make an effort to look like girls or women they see in the media ($p<.001$). These results suggest the importance of both mood and appearance norms as determinants of indoor tanning behavior. Interventions that improve mental health, as well as promote a healthy body image, may reduce indoor tanning behaviors.

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C012

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ASCO GUIDELINES FOR ANXIETY AND DEPRESSION ASSESSMENT AND RISK IDENTIFICATION WITH CHRONIC LYMPHOCYTIC LEUKEMIA PATIENTS

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Introduction: Psychological distress is common amongst cancer patients, with 13–40% of cancer patients experiencing symptoms of depression and 10–30% experiencing symptoms of anxiety. The American Society of Clinical Oncology (ASCO) has provided guidelines for screening, assessment, and treatment of anxiety and depressive disorders in cancer patients and has detailed risk factors for greater disorder severity. Patients with chronic lymphocytic leukemia awaiting the initiation of treatment (a recommended time point for assessment) were screened and information on risk factors was obtained. This study sought to describe the anxiety and depression symptomatology and its relationship with relevant risk factors in an understudied cancer population.

Methods: Patients diagnosed with CLL (N= 113) entering three randomized trials were assessed prior to start of targeted therapy. ASCO recommended measures of depressive (PHQ-9) and anxiety symptoms (GAD-7) were completed. Information on psychiatric disease characteristics (cancer-specific stress and negative life events) and demographic risk factors (income, gender, marital status and age) were obtained. A multiple linear regression was used to predict depression and anxiety from select ASCO (income, gender and marital status) and additional risk factors (cancer-specific stress, negative life events, age and fatigue).

Results: At baseline, 29.3% of patients were experiencing symptoms of depression (18.6% mild, 6.2% moderate and 4.5% moderate to severe) and 26.8% were experiencing symptoms of anxiety (17% mild, 8% moderate and 1.8% moderate to severe). The results of the regression indicated cancer-specific stress, negative life events and fatigue explained 55% of the variance in depression scores ($R^2 = .553$, $F(3, 110) = 44.173$, $p < .000$) at baseline. Cancer-specific stress ($b = .138$, $p < .000$), negative life events ($b = 1.023$, $p = .012$), and fatigue ($b = .159$, $p < .000$) significantly predicted levels of depression. Additionally, another regression indicated negative life events and fatigue predicted 40% of the variance in anxiety scores ($R^2 = .399$, $F(2, 111) = 36.14$, $p < .000$) at baseline. Negative life events ($b = .193$, $p > .000$) and fatigue ($b = .080$, $p = .002$) significantly predicted levels of anxiety.

Discussion: Screening all cancer patients for distress is a new, important criterion to provide innovative treatment for cancer patients. Determining which factors are correlated with depression and anxiety will improve preventative measures and enable the use of supportive care for cancer patients with greatest risk.

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C013

6:15 PM-7:15 PM

ASSOCIATIONS BETWEEN CANCER SURVIVORS' CHANGES IN AUTONOMIC INDICES AND CHANGES IN SYMPTOMS AFTER MIND-BODY INTERVENTIONS

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Background: Cancer survivors commonly experience enduring symptoms including distress, insomnia, and pain. These symptoms are associated with both the disease and its treatment and impair well-being. Although the exact mechanisms are unclear, these symptoms may in part be associated with alterations in autonomic nervous system functioning. Mind-body interventions may alleviate symptom burden during and after active cancer treatment. Exploring the association between changes in autonomic functioning and changes in symptoms associated with participation in mind-body interventions may lead to a better understanding of the mechanisms involved in symptom improvement.

Methods: As part of the Mindfulness And Tai chi for Cancer Health (MATCH) study, 18 distressed cancer survivors (any type of cancer, stage I-III) completed psychophysiological testing and self-report symptom measures before and after participation in Mindfulness-Based Cancer Recovery, Tai Chi/Qigong, or a wait-list control group. The autonomic indices examined were high frequency (HF) and low frequency (LF) heart rate variability (HRV), baroreflex sensitivity, and blood pressure. Questionnaires included measures of mood disturbance (Profile of Mood States), sleep disturbance (Pittsburgh Sleep Quality Index), pain (Brief Pain Inventory), and health-related quality of life (Functional Assessment of Cancer Therapy-General). Analyses were exploratory.

Results: Increases in LF-HRV were associated with increased vigor ($r(14) = .48$, $p < .05$), increased physical well-being ($r(14) = .60$, $p < .01$), decreased depressive symptoms ($r(14) = -.55$, $p < .05$), decreased fatigue ($r(14) = -.48$, $p < .05$), and decreased mood disturbance ($r(14) = -.50$, $p < .05$). Increased HF-HRV was associated with decreased fatigue ($r(14) = -.60$, $p < .01$), and decreased baroreflex sensitivity was associated with increased anger ($r(14) = .48$, $p < .05$) and depressive symptoms ($r(14) = .55$, $p < .05$). There were no changes in symptoms associated with changes in blood pressure.

Discussion: There was a pattern of subjective symptom improvement associated with changes in indices of autonomic functioning, particularly increased LF-HRV. This suggests that changes in indices of autonomic functioning are associated with treatment response to mind-body interventions. Future directions include examining the generalizability of findings in a larger sample and investigating associations between improvements in symptoms and other pathways of the stress response.

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C014

6:15 PM-7:15 PM

COMBINING A UV PHOTO INTERVENTION WITH SELF-AFFIRMATION OR SELF-COMPASSION EXERCISES: IMPLICATIONS FOR SKIN PROTECTION

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Young adults who view an ultraviolet (UV) photo of their skin damage report increased perceived risk of skin damage/cancer and increased skin protection intentions (Walsh & Stock, 2011). However, threatening health information such as a UV photo can inspire defensive or reactive responses (van't Riet & Ruiters, 2013). The current study combined a UV photo intervention with self-affirmation and self-compassion writing exercises, which have been shown to mitigate defensive responses to health information (Terry & Leary, 2011; Koningsbruggen et al., 2009). Employing a 2x3 experimental design, college women (N=167) were randomly assigned to: 1) view a UV photo or Black and White (No-UV) photo of their face and 2) write a self-affirmation, self-compassion, or neutral (sleep-related) essay.

ANCOVA analyses controlled for skin tone and past skin protection. Women who viewed their UV photo (vs. No-UV) reported higher perceived risk of skin damage ($p < .001$) and skin cancer ($p < .001$). However, these differences were only significant among those in the neutral writing condition ($p < .001$). Women who saw their UV photo and wrote a self-affirmation essay actually reported lower perceived risk of skin damage than those who saw their UV photo and wrote a neutral essay ($p = .04$).

A different pattern emerged with behavioral intentions for skin protection. In general, women who viewed their UV (vs. No-UV) photo had higher intentions to protect their skin from the sun ($p < .001$); however, this increase in intentions was only significant for women in the self-affirmation ($p = .02$) and self-compassion conditions ($p = .02$).

As a proxy for skin protection behavior, sunscreen packets were available for participants to take at the end of the study. Logistic regression revealed that viewing the UV photo (vs. No-UV) increased the odds of taking sunscreen among those in the self-compassion condition ($p = .02$). Also, within the No-UV condition, women who wrote a self-compassion essay were more likely to take sunscreen than those in the neutral ($p = .01$) and self-affirmation ($p = .04$) conditions.

Results suggest that while self-affirmation and self-compassion reduce the impact of a UV photo on increased perceptions of risk, these exercises actually enhance the impact of a UV photo on increased intentions for skin protection. Further, writing about self-compassion may promote actual skin protection behavior, an effect that is optimized when paired with a UV photo intervention.

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C015

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DECISION-MAKING AFTER A VARIANT OF UNCERTAIN SIGNIFICANCE FROM GENETIC TESTING FOR HEREDITARY BREAST CANCER: EXPERT OPINIONS

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Background: Next generation sequencing (NGS) is regularly used in the context of hereditary breast and ovarian cancer (HBOC) to simultaneously test for mutations in multiple genes. NGS exponentially increases the likelihood of receiving at least one variant of uncertain significance (VUS) result. Guidelines are lacking for patient decision-making after receiving a VUS result. We used a mental models approach to reveal expert opinions about the types of decisions patients should make and the information (factors) they should consider after receiving a VUS from NGS for HBOC.

Methods: Experts in HBOC were recruited via professional networks and respondent-driven sampling (N = 25) to participate in a three-step data collection process beginning with an online survey. Survey responses informed individual in-depth interviews and the real-time interactive development of a mental model diagram. Following analysis of interviews and diagrams, participants responded to a confirmatory online survey. We analyzed baseline survey data using descriptive statistics. Two coders conducted content analysis on the interview transcripts and mental model diagrams using a consensus approach to coding. We analyzed confirmatory survey data using descriptive statistics and chi-square goodness of fit tests.

Results: Based baseline survey and individual interview results, we identified 8 possible decisions (e.g., medical risk management) and 25 factors patients could consider (e.g., personal medical history). We conducted a goodness-of-fit test for each decision, and the associated factors to determine majority agreement χ^2 (1, N = 24) = 4.17, $p = 0.41$). The final list included 4 decisions patients should consider: medical risk management, enrollment in a research study, sharing results with providers, and sharing results with family. We identified from 3 to 12 factors (e.g., patient preference, patient understanding, and patient medical history) that experts believed patients should consider, depending on the decision.

Conclusion: Our study identified key decisions that patients should consider after receiving VUS from genetic testing for HBOC, and key factors to consider when making them. This information can guide genetic counseling about VUS results, and inform educational interventions for patients who receive VUS results from genetic testing for HBOC.

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C016

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DEPRESSIVE SYMPTOMS (NOT TYPE D PERSONALITY) PREDICT QUALITY OF LIFE IN SURVIVORS OF DIFFERENTIATED THYROID CANCER

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Survivors of differentiated thyroid cancer (DTC) report impaired quality of life (QoL) despite long duration of cure. Research regarding predictors of QoL in this population has largely been limited to demographic characteristics. Type D personality (high negative affect and social inhibition) is correlated with QoL in other chronic illness populations, but has not been thoroughly assessed in survivors of DTC. Therefore, the present study assessed Type D personality as a predictor of QoL in survivors of DTC. Participants included survivors of DTC registered in the Patient Reported Outcomes Following Initial Treatment and Long-term Survivorship (PROFILES) registry. Psychosocial functioning questionnaires were mailed to 334 survivors. Data from eligible respondents (N = 284) were used in logistic regressions to assess relationships between Type D personality and QoL domains. Depression was controlled for in analyses to address concerns regarding conceptual similarity of Type D personality to depression. Type D personality did not predict physical ($\beta = .146$, SE = 0.383, $p = .703$, Exp(B) = 1.157), social ($\beta = 0.389$, SE = 0.375, $p = .299$, Exp(B) = 1.476), cognitive ($\beta = -0.326$, SE = 0.400, $p = .415$, Exp(B) = 0.722), or role functioning ($\beta = 0.015$, SE = 0.349, $p = .965$, Exp(B) = 1.015) beyond what was predicted by depression. Type D personality did significantly predict impaired emotional functioning ($\beta = 1.253$, SE = 0.370, $p = .001$, Exp(B) = 3.500). Depression significantly predicted impaired QoL in all measured domains. Clinical implications argue for continued screening for depressive symptoms in survivors of DTC, but do not support screening for Type D personality in this population. Depression screening may identify individuals at risk for impaired QoL and is currently recommended for cancer patients, including during the transition to survivorship. While identification of personality factors related to impaired QoL may arguably facilitate personalized treatment recommendations, aside from the domain of emotional functioning, Type D personality was not predictive of QoL after accounting for depression. Therefore, additional screening for Type D personality in this population would likely be of limited clinical utility. Further, assessing for a theoretically unmalleable personality trait (such as Type D personality) rather than for a mutable mood state more readily targeted in treatment may delay effective case conceptualization and intervention.

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C017

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DEVELOPING A FAMILY HISTORY-BASED COLORECTAL CANCER PREVENTION AMONG CHINESE AMERICANS: A CBPR APPROACH

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Background: Colorectal cancer (CRC) is the third leading cause of cancer death among Chinese Americans. Nevertheless, Asian Americans have the lowest CRC screening rates among all racial/ethnic groups. Westernized behaviors also increase Chinese Americans' CRC risk. As CRC has a strong genetic predisposition, family health history (FHH) has been proposed as a preventive tool to stratify CRC risk and guide personalized screening and behavioral modifications. The purpose of this study is to use a community-based participatory research (CBPR) approach to develop the first culturally-tailored and linguistically-appropriate FHH-based CRC prevention program for Chinese Americans in Texas.

Methods: This program involved 11 CBPR steps: (1) identifying the partnership, (2) establishing a multidisciplinary team, (3) reviewing existing literature for CRC prevention and FHH-based education, (4) conducting needs assessment among Chinese communities, (5) refining target population, (6) generating a theoretical framework, (7) determining intervention activities, (8) designing educational materials, (9) developing a program evaluation plan, (10) advertising the study, and (11) piloting test and producing a final product.

Results: Key components of this program included a two-hour FHH-based CRC prevention workshop, a free fecal occult blood test, a personalized CRC preventive phone call consultation, and navigation services to health insurance enrollment and doctor visit (if needed). The pilot study indicated the feasibility of the intervention and showed that participants were overall satisfied with the program.

Conclusion: Using CBPR principals, we developed the first culturally and linguistically appropriate FHH-based CRC prevention program for Chinese Americans. This promising project extends beyond traditional CRC prevention programs by adding CBPR, FHH, and navigation components. Pilot data suggested the feasibility to implement this FHH-based CRC prevention program to a large group of Chinese Americans in the future.

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C018

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DISTRESS AND BURDEN IN PARENTS OF PEDIATRIC BRAIN TUMORS SURVIVORS: THE ROLE OF TREATMENT INTENSITY AND MEDICAL LATE EFFECTS

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Objective: Intensive treatment has achieved improved survival rates for pediatric brain tumor survivors (PBTS), but may increase chronic medical late effects (MLE). Child MLE may increase demands on families and elevate risk for increased caregiver strain. We hypothesized that 1) parents of PBTS who required adjuvant treatment with radiation and/or chemotherapy would report more family burden and caregiver distress than parents of PBTS who required surgery alone and 2) MLE would account for the impact of treatment intensity on caregiver outcomes.

Methods: PBTS ($N=187$, 52% male), aged 8–16 ($M_{age}=11.3$, $SD=2.3$) 1–5 years post-treatment, were recruited from five sites in the USA and Canada. MLE (i.e. hearing, vision and speech deficits, alopecia, seizures, neuromotor and endocrine problems) were recorded from medical records. Parents reported symptoms of distress on the Brief Symptom Inventory and perceived family burden on the Impact on Family Scale. Independent t-tests evaluated treatment group differences in MLE and caregiver outcomes. Regression analyses with post-hoc bootstrapping examined the indirect effects of treatment group on family burden and caregiver distress via MLE.

Results: PBTS treated with adjuvant therapy had more MLE than those treated with surgery alone ($M_{adjuvant}=2.74$, $SD=1.62$; $M_{surgery-only}=1.06$, $SD=1.04$; $t(177)=-7.97$, $p<.001$). Treatment groups did not differ in parental distress; however, mothers ($M_{adjuvant}=30.07$, $SD=6.38$; $M_{surgery-only}=25.28$, $SD=6.32$; $t(171)=-4.93$, $p<.001$), but not fathers ($M_{adjuvant}=23.76$, $SD=15.93$; $M_{surgery-only}=20.16$, $SD=19.40$; $t(109)=-1.07$, $p=2.86$), of PBTS requiring adjuvant therapy reported higher family burden than parents of PBTS treated with surgery alone. Despite group differences in MLE and mother report of family burden, the indirect effect of treatment on maternal burden via MLE was not significant (Bootstrap CI=-.32–3.12). The direct and indirect effects of treatment group on father report of burden and distress in either parent were not significant.

Conclusions: Treatment intensity may influence subsequent burden experienced by mothers but not fathers after children complete treatment for childhood brain tumors. Interestingly, this does not appear to be explained by the co-occurring elevation in MLEs experienced by these children. Future research should investigate other child impairments due to treatment (e.g. cognitive, emotional, social) that may explain the group differences in caregiver outcomes.

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C019

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EFFECT OF CULTURAL BELIEFS, FATALISM AND PERCEIVED CANCER RISK ON ADHERENCE TO MAMMOGRAPHY AMONG ETHNIC MINORITY WOMEN

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Background: Medically underserved minority women bear a disproportionate burden of breast cancer (BC) mortality. Early detection is vital for reducing BC mortality. As mammography is the mainstay of early detection, increasing adherence to mammography is crucial in this population.

Objective: The objective of this study is to examine the impact of cultural beliefs, fatalism and perceived BC risk on adherence to mammography in minority women with average and increased risk for BC.

Methods: Women ($N=346$) were recruited from a Federally Qualified Health Center in the Southside of Chicago that provides care primarily for underserved African American and Latino patients. Women attending an annual wellness visit were invited to participate based on the outcome of BC risk assessment conducted at the time of the visit. The assessment tool categorized women into average or increased risk based on age, family history and reproductive history. All increased risk and 1-in-4 randomly selected average risk women were invited to participate in the study. Sociodemographic factors, a Cultural Beliefs scale with items associated with late-stage diagnosis of BC (culturally-associated misconceptions about BC), fatalism and perceived risk of having BC were collected through interviewer-administered surveys. Bivariate and multivariate analyses were performed to determine the association between the dependent and independent variables. Mammography adherence within the past 2 years (dependent variable) was based on self-report.

Results: The sample ($N=151$) for this analysis was limited to women age > 40 years. Among women at increased BC risk, bivariate analysis showed increased fatalism was associated with a lower odds of mammography adherence ($OR=0.693$; $P=0.010$) and older age with a higher odds of adherence ($OR=1.114$; $p=0.005$). Increased perceived BC risk among increased risk women was also associated with a higher odds of adherence ($OR=4.328$; $p=0.033$) when controlling for age. Endorsing a greater number of misconceptions on the cultural belief scale was marginally associated with a lower odds of adherence ($OR=0.843$ $p=0.05$) for all women in the multivariate model.

Conclusion: Cultural beliefs associated with late stage diagnosis of BC are also associated with mammography adherence in underserved minority women. Screening interventions should be culturally sensitive to address these beliefs.

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C020

6:15 PM-7:15 PM

EFFECTIVENESS OF PSYCHOSOCIAL NEEDS AND EMOTIONAL DISTRESS ASSESSMENT IN AN NCI-DESIGNATED CANCER CENTER

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Background: Increased emotional distress is frequently reported among persons with cancer and has been found to be associated to poorer outcomes (e.g., decreased quality of life and treatment noncompliance). The CoC mandate 3.2 addresses this issue and states that distress must be measured at least once. This standard was implemented on January 1, 2015. While most accredited institutions are assessing distress, the evaluation of its effectiveness and efficiency to provide care is not well established. Developing and identifying effective measures to improve patient outcomes remains essential, and a pathway may exist by examining staff/provider perceptions of such measures to increase utilization and integration of such measures.

Objectives: We explored provider and staff knowledge and satisfaction of the implementation of the Patient Need Assessment (PNA) and their understanding of the workflow and utility of patients needs within an NCI-designated Cancer Center. The PNA, which is administered to all patients within the cancer center at their second appointment via paper/pencil, is aimed at identifying a patient's current level of distress and examining practical, emotional, nutritional, spiritual, and physical concerns, while offering patients' referral to supportive services.

Method: All providers and staff working within the cancer center were invited to participate in an online evaluation of the PNA implementation. Descriptive statistics and thematic analyses were used to assess provider/staff satisfaction of the PNA.

Results: Roughly 1/3 of all staff completed the online survey with a total 64 staff/provider respondents. Almost half of the staff respondents were nurses or medical assistants. Most staff reported familiarity of the PNA but were unaware of national guidelines for screening of distress and did not find the assessment to be useful in managing patient care.

Conclusions: Amongst staff or providers, many were unfamiliar with the necessity of addressing or assessing psychosocial needs in cancer patients, suggesting a discrepancy in providing holistic care and integration of the PNA to patient care. Exploratory findings suggested that with regard to workflow and administration of the PNA, utilizing tablets and/or having patients complete the PNA prior to their first visit might increase provider/staff valuation of the PNA. Yet, findings suggest an imminent need for how to best evaluate and address psychosocial and emotional distress among patients with cancer to increase health outcomes. Evaluation findings also indicated a need to unify employees via education of the need and utility of the PNA. In addition, positive reinforcement for their effort in administering the PNA effectively may increase its perceived value within the institution. Future research may want to assess how staff knowledge in these mandates is related to values in administration of these quality standards.

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C021

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ESTABLISHING PATIENT PROFILES TO PREDICT USE OF A PROSTATE CANCER SURVIVORSHIP WEBSITE: IMPLICATIONS FROM A MULTI-SITE RCT

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Background PROGRESS is a web-based resource for prostate cancer (PC) survivors. It has been designed to empower survivors to effectively manage and cope with treatment-related side effects. Prior to release, PROGRESS was pilot tested for ease of use, content, and acceptability. The goal of this study was to examine patient characteristics related to PROGRESS usage, to aid in the future dissemination of this patient resource tool. Methods PC survivors (N=434) were randomly assigned to receive either PROGRESS (intervention group; n=216) or printed educational materials (control group; n=218). Chi-square and independent sample t-tests were used to analyze baseline characteristics of intervention group participants and their PROGRESS website usage at one month. Results The majority of participants were White (n=310, 71.4%), non-Hispanic (n=375, 86.4%), and married (n=346, 79.7%), with an average age of 63.52 (SD=7.12, Range: 42–86). Of the 216 patients randomized to PROGRESS, 87 (41%) reported using the website vs. 125 (59%) non-users. Users, compared to non-users, were more likely to be White (p=.015), older in age (p=.017), and be significantly more knowledgeable of their PSA (p=.047). Website users, compared to non-users, were more health literate (M=4.51, SD=.65 v. M=4.26, SD=.81, p=.016) and demonstrated a greater drive to seek information (M=2.87, SD=1.99 v. M=2.22, SD=2.30, p=.029). Conclusions Non-white, younger patients with less knowledge about their diagnosis, lower health literacy, and a low desire to seek information were less likely to utilize the PROGRESS website. Thus, those currently using the website are the very patients who already have access to and utilize resources and support. To reach and support underserved patients, future studies involving web-based interventions need to incorporate targeted support in the form of website and computer training, pamphlets, and motivational messages through telephone or text reminders. These practices may enhance usage of web-based interventions and increase engagement among those patients who are likely to benefit most from the offered programs.

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C022

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EVALUATING THE EFFICACY OF A WEB-BASED SUPPORT TOOL FOR PROSTATE CANCER SURVIVORS: RESULTS FROM THE MULTI-SITE PROGRESS STUDY

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Background PROGRESS is a web-based resource for prostate cancer (PC) survivors aimed at the post-treatment, early survivorship period. Content consists of patient and physician videos, interactive symptom tracking features to document recovery, and information based on the latest behavioral evidence to improve coping skills, physical functioning, and emotional well-being. Methods Data were drawn from one-month post-randomization assessments of patients recently treated for PC and randomized to PROGRESS or a control group (receiving NCI print materials). The purpose of these analyses was to evaluate the efficacy of PROGRESS on outcomes including: coping, depression, mood/affect, and patient-provider interactions. Two sets of mean difference tests on these outcomes were conducted: first, comparing intervention (n=168) and control (n=174), and next, comparing, within the intervention arm, website users (n=76) v. non-users (n=81). Results The majority of patients were White (75%), non-Hispanic (88%) and married (82%), with an average age of 63.61 (Range: 42–85, SD=7.12). There were no significant differences between the intervention and control groups on baseline demographics, nor on one month post-randomization assessments. In light of the potential for dilution of the intervention effect due to a significant proportion of non-users in the intervention group and an enhanced control comparison, we compared PROGRESS users and non-users to more accurately evaluate the intervention. Within the intervention arm, patients who utilized the website, compared to those who did not, were, at one month follow-up, more likely to engage in active coping, (p=.04), had less depression (p=.03) and depressed mood (p=.04), had more positive affect (p=.007), and had fewer difficulties with medical interactions (p=.05). Conclusions For the subgroup of patients who chose to actively use the PROGRESS website, the intervention showed the hypothesized effect on coping and quality of life. However, uptake is not optimal and therefore should be directly addressed in the research design of survivorship aids. Future research involving software based interventions should consider targeting vulnerable patients who are likely non-users but may benefit from such aids and provide motivational support to sustain usage.

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C023

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EVALUATION OF A COMMUNITY-BASED EXPERIENTIAL NUTRITION AND COOKING EDUCATION PROGRAM FOR CANCER SURVIVORS

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Introduction: The Cancer Support Community (CSC) provides psychosocial support to people facing cancer in community settings. The purpose of this study was to evaluate the compatibility, effectiveness, and fidelity of the Coping with Cancer in the Kitchen (CCK) experiential nutrition and cooking education program at CSC Central New Jersey and Fairfield Medical Center in Ohio. The program is designed to increase acceptance and consumption of a mostly plant food diet. Program content is based on American Institute for Cancer Research (AICR) Recommendations for Cancer Prevention and two evidence based programs, “The New American Plate®” and “Foods That Fight Cancer™”. The behavior change approaches in CCK, including group counseling and support, are consistent with CSC’s approach to psychosocial care.

Methods: A Registered Dietitian (RD) and Licensed Clinical Social Worker (LCSW) at each site implemented CCK. Cooking confidence, knowledge, dietary intake (NCI’s Dietary Screener Questionnaire), and health-related quality of life (FACT-G) were assessed before and after the 7-week intervention. We analyzed quantitative results using unadjusted statistical tests and reviewed qualitative comments by participants as well as meeting notes and written reflections of program staff to assess program compatibility and fidelity. Effect size was calculated by dividing the pre-post difference mean by the SD (Cohen’s d).

Results: 21 survivors of breast (n=12), blood (n=3), gynecologic (n=3), esophageal (n=1), colorectal (n=1), and melanoma (n=1) cancers participated, with 16 completing pre- and post-test surveys. Participants reported an increase in cooking confidence (p=.002, d=0.96), perceived control over cancer (p=.034, d=0.58), perception of dietary quality (p=.009, d=0.76), and weekly self-reported skills capacity, including knowledge and ability to prepare plant-based foods (p=.0002, d=1.0). There was a decrease in meals eaten away from home (p=.026, d=0.61). There was a non-significant (NS) trend in increase in fruit, vegetable, and whole grain intake, with desirable effect sizes for intake of beans (d=0.39), vegetables (d=0.41), and cooked whole grains like brown rice and quinoa (d=0.36). Results also suggested a NS trend in increase in health-related quality of life (p=.067). Participants and staff endorsed the intervention as compatible with CSC’s mission and viewed it as feasible to implement with high fidelity.

Conclusion: Cancer survivors participating in the evidence-based nutrition and psychosocial intervention experienced positive cognitive and behavioral changes after 7 weeks. This pilot project demonstrates that community-centered education and support services led by trained providers can address eating and nutrition needs and empower those living with cancer in CSC centers and hospital settings.

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C024

6:15 PM-7:15 PM

EXTENDING THE PHYSICAL ACTIVITY AND CANCER SURVIVORSHIP REACH: THE CASE OF ACTIVEMATCH

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Background: Physical activity (PA) is a safe and effective strategy to help reduce many acute and chronic side effects of a cancer diagnosis. In spite of the well-known benefits of PA, most women diagnosed with cancer are not physically active, which suggest an apparent knowledge-to-action gap. Drawing on PA knowledge translational science in oncology and knowledge mobilization frameworks, the purpose of this study was to bridge this gap by developing and evaluating a PA resource for improving PA among women diagnosed with cancer.

Methods & Results: In line with a knowledge mobilization plan, five guiding principles were followed to extend PA and cancer knowledge reach. First, a rigorous review of PA resources, programs, and interventions was conducted to “*get to know the audience and issues*”. Low levels of PA, and lack of translational science methods were outcomes. Second, women diagnosed with breast cancer (N=201) completed a needs assessment survey to identify “*preferred and credible sources of PA information*”. Lack of social support, limited access to PA partners, and limited knowledge of cancer among fitness trainers were main barriers to PA among women diagnosed with cancer. Third, through focus groups with N=9 women diagnosed with cancer, “*audience-specific messages and practices*” were developed in the form of ActiveMatch (activematch.ca) - an online and app platform to help women find PA partners. ActiveMatch was launched and women using the platform provided information on preferences for PA. ActiveMatch users (N=165; Mean age = 47, 70% breast cancer, 65% in active treatment) suggest weight loss and emotional health as main goals for PA. Preferences for walking (90%), outdoor PA (53%), and morning PA (38%) have been identified. Nearly all women (95%) wanted one PA partner. Fourth, the “*effectiveness of message conveyance*” was explored using 8 community group discussions with women diagnosed with cancer and fitness trainers. In focus groups, interviews, and informal discussions, over 30 cancer care practitioners have identified ActiveMatch as a credible resource for PA information and support and suggest that ActiveMatch fills a gap in PA service. As an indicator of success, a breast cancer and PA non-profit organization has collaborated with ActiveMatch to continue to build PA and cancer resources, opportunities, and partnerships. The “*evaluation of effectiveness*” step in the knowledge mobilization plan is on-going.

Conclusions: In line with a community partnership, ActiveMatch provides a credible resource for improving PA among women diagnosed with cancer and is an example of successful “extension of reach” for next steps in increasing PA for enhanced well-being and health of the hundreds of women diagnosed with cancer each day.

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C025

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HOLDING BACK ASSOCIATED WITH CAREGIVER STRAIN AND DISTRESS AMONG CAREGIVERS OF PATIENTS WITH ADVANCED CANCER AND PAIN

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Background: For patients and their family caregivers, advanced cancer poses significant physical and emotional challenges that can negatively impact both individuals. When patients have pain, the impact on the caregiver can be particularly profound, with caregivers often feeling overwhelmed, frustrated, and helpless. In studies of couples coping with cancer, the ability to communicate openly and effectively with each other about cancer-related concerns has been associated with better psychological adaptation, while holding back from discussing concerns is associated with greater distress. Few studies, however, have examined holding back in the context of family caregivers of patients with advanced disease and pain. The purpose of the present study was to examine associations between caregivers' reports of holding back from discussing cancer-related concerns with the patient and measures of caregiver distress.

Methods: Participants were 99 patients with Stage IV cancer who reported pain ≥ 4 and their family caregivers. The mean age of the patients was 64.5 years, 65% were male, 79% were Caucasian and 15% African American. Most frequent cancers sites were lung (20%), GI (19%), and prostate (13%). The mean age of the caregivers was 59.9 years, 27% were male, 74% Caucasian and 17% African American. Caregivers were primarily spouses/partners (69%) and adult children (13%) of the patients. Caregivers completed the Holding Back subscale of the Emotional Disclosure Scale, the Caregiver Strain Index, the Center for Epidemiology Studies Short Depression Scale, and the Trait Anxiety Index.

Results: Caregivers in this study reported higher levels of holding back (mean=2.00, SD=1.1) than typically reported by spouses in previous studies. Pearson correlation analyses demonstrated significant associations in the expected directions. Higher levels of caregiver holding back were associated with higher levels of caregiver strain (.04, $p = .05$). Additionally, higher levels of caregiver holding back were correlated with higher levels of depression and anxiety (.001, $p = .005$).

Conclusions: These findings suggest that family caregivers of patients with advanced cancer and pain may have difficulty talking about cancer-related concerns with their loved ones, and that holding back is associated with higher levels of caregiver strain and psychological distress. Additional longitudinal data from this ongoing study may provide insight into whether strain/distress is a result or a cause of holding back. These findings will be discussed relative to their implications for interventions aimed at developing more effective ways to help patients and their caregivers cope with cancer and pain.

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C026

6:15 PM-7:15 PM

INVOLVEMENT IN DECISION-MAKING, AND USE OF INTEGRATIVE ONCOLOGY IMPROVE BREAST CANCER SURVIVOR HRQOL IN EARLY SURVIVORSHIP

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Objective: This study sought to describe changes in the health related quality of life (HRQOL) of women who do and do not receive integrative oncology (IO) Complementary and Alternative Medicine (CAM) care during and immediately after breast cancer treatment, and explores the predictive role of, demographic characteristics, IO CAM care, and involvement in decision-making on HRQOL.

Methods: Matched cohorts of breast cancer survivors who did and did not supplement their breast cancer treatment with IO care within two years of diagnosis participated. IO users were identified through IO clinics and usual care controls with similar prognosis were identified through a cancer registry. The registry provided information about all participants' age, race, ethnicity, marital status, stage of cancer at time of diagnosis, and use of conventional medical treatments. Participants' self-reported their involvement in decision-making about their treatment, and completed a HRQOL assessment using the SF-36 instrument. Information about involvement and HRQOL was collected at study enrollment and at 6-month follow-up.

Results: Multiple regression analyses examined change in SF-36 scale scores to 6-month follow-up by including baseline scores as a predictor. Additional predictors examined included: study enrollment matching variables, time since diagnosis at enrollment, treatment received (surgery type, use of chemotherapy, and use of radiation) and involvement in decision-making. These analyses revealed self-reported involvement in decision-making about cancer treatment at study enrollment to associated with better Role-Physical, Role-Emotional, and Social-Functional well-being as assessed by the SF-36 scales at 6-month follow-up ($p < 0.05$), in both bivariate analyses and when included in multivariate adjusted models ($p < 0.05$). Cohort also proved to be a statistically significant predictor of change in the General Health subscale of the SF-36 such that women in the IO cohort reported larger improvements over the 6-month interval immediately following the initiation of IO treatment ($p < 0.05$). Race, age, marital status, and congruence of preferred and achieved levels of involvement, also predicted aspects of HRQOL in breast cancer survivors at enrollment and follow-up ($p < 0.05$).

Conclusions: Both involvement in decision-making about cancer treatment, and IO CAM care may be associated with better HRQOL in breast cancer survivors.

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CITATION AWARD WINNER

C027

6:15 PM-7:15 PM

LIFESTYLE PATTERNS AND MORTALITY FOLLOWING BREAST CANCER AMONG PARTICIPANTS OF THE CAROLINA BREAST CANCER STUDY

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Purpose: To identify distinct lifestyle patterns based on five behavior/dietary exposures among a population-based sample of women diagnosed with breast cancer, and to examine their association with subsequent mortality.

Methods: In the Carolina Breast Cancer Study (Phases I/II), 1,808 women aged 20–74 were interviewed on average within six months of a first diagnosis of invasive breast cancer and followed since diagnosis (median=13.56 years). Vital status was determined using linkage to the National Death Index (717 deaths, 427 from breast cancer). We identified lifestyle patterns using Latent Class Analysis based on five behavior/dietary exposures: never/former versus current smokers; low versus high vegetable (<14 vs ≥14 cups/week) and fruit (<10.5 vs ≥10.5 cups/week) intake; low/moderate versus high (<7 vs ≥7 drinks/week) alcohol consumption; and no versus any (<1 vs ≥1 time/week) physical activity. We used Cox regression to estimate hazard ratios (HRs) and 95% confidence intervals (CIs) for breast cancer-specific and all-cause mortality.

Results: We identified three distinct lifestyle patterns: Class 1=healthy behavior-healthy diet (HB-HD, n=916); Class 2=unhealthy behavior-healthy diet (UB-HD, n=233), and Class 3=healthy behavior-unhealthy diet (HB-UD, n=659). Compared to HB-HD pattern, the UB-HD and HB-UD patterns were associated with 33% (HR=1.33, 95% CI=1.04–1.69) and 22% (HR=1.22, 95% CI=1.03–1.46) increases, respectively, in risk of all-cause mortality. The influence of lifestyle on overall mortality was found to vary by follow-up time and race, but not estrogen receptor status. The lifestyle patterns were not associated with breast cancer-specific mortality.

Conclusions: Women diagnosed with breast cancer may adopt varying lifestyle patterns that influence overall mortality.

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C028

6:15 PM-7:15 PM

MEASURING THE CAREGIVER EXPERIENCE IN HEMATOPOIETIC CELL TRANSPLANTATION (HCT): HOW DOES THE CQOLC PERFORM?

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Measuring the caregiver experience in Hematopoietic Cell Transplantation (HCT): How does the CQOLC perform?

Family CGs of patients undergoing HCT are at risk for significant levels of distress that can also impact patients (Bevans et al., 2011; Bevans & Sternberg, 2012), highlighting the two-fold importance of understanding the caregiving experience. The aim of this study was to examine the CG experience in the context of an ongoing clinical trial of an mHealth tool (BMT Roadmap), and investigate psychometric properties of the Caregiver Quality of Life Index-Cancer (CQOLC; Weitzner et al., 1999) compared with other established measures.

Primarily white female CGs were electronically surveyed at admission, discharge, and day 100: 15 pediatric CGs (PCGs; mean age 37 years) and 16 adult CGs (ACGs; mean age 57 years). All completed the CQOLC. PCGs also completed the Impact of Events Scale-Revised (IES-R; Weiss et al., 1997), assessing post-traumatic distress related to transplant. ACGs completed the Caregiver Cancer Related Distress Inventory (CTXD; Syrjala, 2010).

Internal reliability of the CQOLC total score was high (Cronbach's alpha=.86-.96), but was more variable across subscales (Cronbach's alpha=.56-.91 in PCGs and .71-.92 in ACGs). Overall, the CQOLC improved significantly across time for PCGs, $F(2,28)=3.55$, $p=.04$ ($\eta^2=.20$), but not ACGs. Post-hoc analyses showed improvement in CQOLC between admission and discharge ($p<.01$) for PCGs. The Burden subscale improved over time for both PCGs, $F(2,28)=7.27$, $p<.01$ ($\eta^2=.34$) and ACGs, $F(2,30)=5.75$, $p<.01$ ($\eta^2=.28$). No other subscales changed across time. Correlation analyses indicated divergent validity between CQOLC and the IES-R among PCGs and convergent validity between CQOLC and the CTXD subscales among ACGs ($r=.63$, $p=.03$ to $r=.89$, $p<.001$). ACG CQOLC scores were better than published means of ACGs of patients with various types of cancer, advanced stage cancer, or in palliative care ($p<.001$; Sun Rhee, 2008; Wadhwa, 2011; Weitzner, 1999). The literature lacks relevant comparators for PCGs.

These results support the CQOLC as a valid measure that can monitor change across the acute HCT experience. Although HCT ACGs showed less life disruption than comparable samples, our findings indicate caregiving may have a different trajectory depending on whether caring for an adult or child/adolescent. These outcomes suggest future studies could deploy the CQOLC to investigate the bidirectional effects of caregiving on CGs and patients, and further examine differential effects of caring for an adult or pediatric HCT patient.

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C029

6:15 PM-7:15 PM

ONCOLOGY CLINICIANS' ATTITUDES AND BARRIERS TOWARD THE ENROLLMENT OF UNDERSERVED POPULATIONS INTO CANCER CLINICAL TRIALS

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Cancer clinical trials represent the "gold standard" for testing the safety and efficacy of novel cancer therapies. Optimizing trial participation is critical to ensuring the generalizability of trial findings across diverse groups. However, trial enrollment rates remain suboptimal, with as few as 2–5% of adult cancer patients participating in NCI-sponsored cancer clinical trials. Notably, racial/ethnic minority, socioeconomically disadvantaged, and rural populations are underrepresented in clinical trials. Although studies demonstrate that clinician support largely influences patients' decisions to participate in trials, few studies have sought in-depth means to elicit oncology clinicians' perspectives for improving trial accrual, particularly among underrepresented groups. To identify factors that informed clinicians' decision to recommend and enroll minority and socioeconomically disadvantaged patients into cancer trials, we conducted in-depth qualitative interviews in 2016–2017 with 17 oncologists (mean age=46, female=38%; White=75%) at a large academic medical center. Content analysis of the interviews revealed several barriers, including 1) clinician burnout; 2) conflicts of interest and ethical dilemmas; and 3) ambivalence about the risks and benefits of clinical trials. Many oncologists reported that trial logistics (e.g., physical risks) conflicted with their commitment to reduce harm and ensure patient well-being. While clinicians acknowledged the value of clinical trials, they struggled with recommending enrollment to patients with literacy, psychiatric, financial, and other socioeconomic vulnerabilities. Concerns about the legitimacy of informed consent, perceived lack of clinical equipoise, and fear of personal bias due to conflicting interests (e.g., own academic advancement from clinical trial enrollment) influenced clinicians' decisions to recommend clinical trials during treatment discussions. Clinicians also identified patient and oncologist-specific needs to address these challenges, including increasing informational and financial support for patients and involving personnel other than the treating clinician (e.g., navigator) to assist with clinical trial enrollment. Findings suggest that clinical trial navigation programs for both the patient and oncologist may help reduce access barriers and increase enrollment of underrepresented patients into cancer clinical trials.

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C030

6:15 PM-7:15 PM

PERCEPTIONS OF THE HPV VACCINE AMONG EAST AFRICAN IMMIGRANT MOTHERS

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Title: Perceptions of the HPV vaccine among East African immigrant mothers: results from formative work to design education materials for mothers and adolescents.

Background: HPV vaccine uptake is lower among adolescents of East African descent than in the overall US adolescent population. We conducted focus groups with Somali, Ethiopian, and Eritrean immigrant mothers in King County, Washington to gather information about their knowledge and perceptions of the HPV vaccine, and identify HPV vaccination barriers and facilitators. Our findings informed the content of a group education module for East African mothers and a comic book for East African adolescents.

Methods: We convened three separate focus groups in Somali, Amharic, and Tigrinya (with 9–11 mothers per group, n=30). Mothers were eligible to participate if they were fluent in one of the three languages and had ≥1 child between the ages of 11–17 years. The focus group guide was informed by the Anderson Behavioral Model of Health Services (predisposition, enabling, and need for care factors) and the Social Context Framework. We coded transcripts and identified themes of relevance to intervention development.

Results: Participants' mean (standard deviation) age was 41.0 (5.6) years, and they had 9.5 (4.5) years of formal education. Most were married (80%), and had 1–2 children between the ages of 11–17 years. Five (16.7%) reported that ≥1 of their children had received the HPV vaccine. Themes emerged around predisposing, enabling, and need for care factors. Predisposing factors included general perception of vaccines, lack of knowledge of HPV vaccine benefits, and concerns around vaccine side effects. Receiving information from trusted sources such as healthcare providers, family members, and friends were enabling factors. Need for care factors included age and gender-specific HPV vaccine information, places to access relevant information, and opportunities to interface with culturally sensitive healthcare providers. Social and religious factors also impacted HPV vaccine uptake.

Conclusion: Through this formative research process we were able to explore knowledge and perceptions of the HPV vaccine, as well as identify barriers and facilitators to HPV vaccination among East African immigrant mothers. Our findings are relevant to the development and implementation of culturally appropriate interventions to increase HPV vaccination rates in East African immigrant communities.

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C031

6:15 PM-7:15 PM

QUALITATIVE EVALUATION OF A PHYSICAL ACTIVITY INTERVENTION FOR SOCIOCULTURALLY DIVERSE ENDOMETRIAL CANCER SURVIVORS.

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Introduction: Endometrial cancer survivors are the least physically active of all cancer survivors, and are at elevated risk of developing comorbidities. Research exploring perceptions of physical activity (PA) among socioculturally diverse endometrial cancer survivors is in its infancy. The primary aim of the current study was to qualitatively explore endometrial cancer survivors' experiences and perceptions following a 12-week PA intervention to gain a more complete understanding of survivors' experiences.

Methods: Sixteen participants who had completed a 12-week PA intervention based on Social Cognitive Theory volunteered to participate in this study. Inclusion criteria were body mass index ≥ 30 kg·m⁻², English-speaking survivors of endometrial cancer at least six-month post-treatment who had not exercised regularly during the previous six months and lived in Bronx, NY. Participants completed one-on-one semi-structured interviews with one of the two fitness class instructors regarding motivators and barriers to PA, as well as their perceptions of the 12-week intervention. A phenomenological approach was used to interpret participants' experiences.

Results: The sample was older (mean: 64 years, range: 42 – 74 years) and obese (mean BMI: 38.0, range: 30 – 54 kg·m⁻²). The sample was also ethnically diverse, including 7 Hispanic, 4 non-Hispanic black, and 4 non-Hispanic white participants. The primary types of PA included leisure-time physical activity (e.g., doing household chores) or walking (e.g., walking). Participants reported their motivating factors for PA were maintaining or improving health, being able to participate in family life (including for their dogs) and reducing weight and/or waist size. The overwhelming majority of participants reported weather (heat and/or cold) and pain from various injuries to be their greatest PA barriers. The perceived intervention benefit that came up most often was the positive impact of the social interactions with their peers regarding both motivating them to come to class and being able to share with friends.

Conclusion: Future interventions with similar populations should emphasize PA programs with a large social component that focuses on pain attenuation and ways to keep active during poor weather. Furthermore, these programs may incorporate increasing walking and PA during activities of daily living to most effectively improve health.

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C032

6:15 PM-7:15 PM

QUALITY OF LIFE IN PEDIATRIC BRAIN TUMOR SURVIVORS: ROLE OF SPECIFIC AND CUMULATIVE MEDICAL LATE EFFECTS

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Purpose: Aggressive treatment achieves 5-year survival rates for 65% of children with brain tumors; but two thirds experience medical late effects (MLE) including sensory, neuromotor and endocrine dysfunction. Although pediatric brain tumor survivors (PBTS) are also at risk for diminished physical and psychosocial quality of life (QoL), little is known about linkages with specific MLE or the cumulative burden of multiple MLE.

Methods: 187 PBTS (52% male), age 8–16 years ($M=11.3$, $SD=2.2$), and their caregivers participated at 5 sites in the U.S. and Canada. Caregivers completed the Child Health Questionnaire (CHQ) to assess child psychosocial and physical QoL. PBTS completed the Harter Self-Perception Profile for Children (SPPC), assessing psychosocial (social acceptance, behavior, self-worth) and physical (athletic) competencies. Medical records provided data about MLE including sensory (hearing, vision) and speech deficits, alopecia, seizures, neuromotor and endocrine problems. T-tests and correlations analyzed the association of MLE on QoL.

Results: Overall, PBTS' physical ($M=45.2$, $SD=13.0$; $t(186)=-8.3$, $p<.01$) and psychosocial ($M=50.0$, $SD=8.3$; $t(186)=-1.2$, $p<.05$) QoL were lower than CHQ norms. PBTS self-report of physical (athletic) and psychosocial (social acceptance and self-worth) domains of the SPPC were lower than normative data. Most (80%) PBTS had at least one MLE and 52% had 2 or more. Cumulative MLE predicted poorer physical ($r = -.21$, $p<0.01$) but better psychosocial ($r = .17$, $p <.05$) QoL on the CHQ. Children with vision ($t(174)= 3.7$, $p<0.01$), neuromotor ($t(179)= 3.1$, $p<0.01$), hearing ($t(174)= 2.4$, $p=.02$) and endocrine deficits ($t(147)= 4.3$, $p<0.01$) had lower physical QoL than PBTS without those MLE. Although, caregivers reported better psychosocial QoL for children with more MLE, PBTS with an endocrine, sensory or neuromotor difficulty scored lower than other PBTS on at least one psychosocial domain of the child report SPPC. Perceived athletic/physical competence was also linked to MLE.

Conclusion: The association of MLE with QoL for PBTS is complex. Caregiver and self-reports consistently linked physical QoL to MLE for PBTS, but discrepancies emerged in analysis of psychosocial domains. Surprisingly, PBTS, but not their caregivers, reported diminished psychosocial functioning with persistent MLE, suggesting parents either are not aware or reframe expectations for behavioral functioning in the context of longstanding sequela of medical care.

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C033

6:15 PM-7:15 PM

STRESSPROFFEN: PILOT RESULTS OF A STRESS MANAGEMENT APP FOR PATIENTS WITH CANCER

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Background: A cancer diagnosis and ensuing treatment can be overwhelming and disruptive, often accompanied by a wide variety of stressors. Psychosocial stress management interventions may support stress reduction, but are not always offered or available to patients. To address this issue, the current study developed an easily accessible app-based cognitive behavioral stress management intervention for patients with cancer, called *StressProffen*.

Aim: To explore usability, use and preliminary effects of *StressProffen* for intervention evaluation and augmentation in patients with cancer.

Method: *StressProffen* was developed using user centered design methods with considerable user involvement. A feasibility pilot tested the intervention with cancer patients (N=25). The intervention contained: a) face-to-face introduction session, b) ten app based modules with educational stress management material and 36 different exercises (e.g., thought challenges, diaphragmatic breathing and mindfulness), and c) one follow-up phone call after 2 weeks. Questionnaires related to *stress* (Perceived Stress Scale), *distress* (Distress Thermometer), *anxiety* and *depression* (HADS) were completed at baseline and post intervention. Following completion all participants were interviewed about their experiences. User log data were also extracted.

Results: Participants were mainly women (84%), ranged 34–71 yrs old (mean 48) and represented a wide variety of cancer diagnoses, but majority breast cancer (40%). Average time spent on the intervention was 62 days. Dependent/paired t-tests showed significant preliminary pre- post intervention effects with significant decrease in *stress* ($p < .008$, mean diff (MD) -3.95, SD 6.35) and *anxiety* ($p < .019$, MD -1.73, SD 3.18). Distress and depression scores also decreased, although not significant; *distress* ($p = .067$, MD -.77, SD 1.88), *depression* ($p = .148$, MD -.73, SD 2.27). In post intervention interviews participants described having obtained a broader understanding of distress and that *StressProffen* had provided them with many new stress management tools for use in their everyday challenges as cancer survivors. The easy accessibility was highly appreciated by the participants as the intervention could be used anytime and anywhere and they "did not have to bother anyone for help". The face-to-face introduction group and phone call was important to establish rapport and to secure adherence.

Conclusion: An app based stress management intervention can provide highly appreciated support for patients with cancer, is easy to use and can provide significant stress reduction and may improve emotional wellbeing for cancer patients. Further testing in a large randomized trial is warranted.

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C034

6:15 PM-7:15 PM

SYMPTOM PROFILES OF ONCOLOGY PATIENTS SEEKING PALLIATIVE CARE: A COMPARISON BETWEEN DIFFERENT DIAGNOSTIC GROUPS

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Objective: The field of Palliative Care is a growing and increasingly important component of comprehensive cancer care. A greater proportion of cancer survivors are living longer with advanced forms of cancer and are receiving Palliative Care services. Despite gains in the medical management of advanced cancers, the psychosocial needs of patients within specific diagnostic groups receiving these services are largely unidentified. This exploratory study sought to understand the distinct needs and concerns of 167 consecutively evaluated patients with advanced cancers seen within an outpatient Palliative Care clinic.

Methods: A mixed sample of cancer patients (N=167) receiving their first consultation for Palliative Care at an academic medical center completed the Edmonton Symptom Assessment Scale (ESAS) to assess 13 domains, ranging from physical pain, spiritual pain, financial distress, depression, anxiety, and general well-being. Responses from the entire sample, as well as from specific groups (24.5% lung, 19.2% GI, 16.1% genitourinary, 13.2% breast, 11.4% head & neck, 7.2% brain, 5.4% lymphoma, 3.0% gynecological) were compared. Self-reported symptom presentation for each diagnostic group was analyzed using one-way ANOVAs and Pearson's correlations. Data comparing one diagnostic group against the aggregate of the other groups were analyzed via independent samples t-tests and regression analyses.

Results: After controlling for age (M=60.1 years, SD=12.2), gender (51.2% female), and race (80.6% Caucasian), analyses show that patients with GI cancers reported significantly higher levels of depression (p=.004), anxiety (p=.004), and financial distress (p=.005) compared to the remainder of the sample, comprising the aggregate of the aforementioned diagnostic groups. A significant correlation was found between depression and anxiety for the GI cancer group ($r = .437$, $p = .012$).

Conclusions: Patients with advanced GI cancers have psychosocial needs and concerns that distinguish them from other patients with advanced cancers seeking Palliative Care services. A more comprehensive and nuanced understanding of the unique needs and concerns of patients seeking Palliative Care services will aid the development of diagnosis-specific assessment and intervention programs, targeting depression, anxiety, and general well-being. Further research is needed to replicate these findings and to assess the broader psychosocial needs of patients with advanced GI cancers.

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C035

6:15 PM-7:15 PM

THE EFFECT OF OBESITY ON CANCER-RELATED FATIGUE, INFLAMMATORY MARKERS, AND PLASMA FATTY ACID LEVELS IN BREAST CANCER SURVIVORS

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Background: Breast cancer survivors experience a high prevalence (75%) of cancer-related fatigue (CRF). For breast cancer survivors, changes in weight during and after treatment may also affect severity of CRF. Increases in inflammation and plasma free fatty acids related to obesity may contribute to CRF. The aim of this study is to examine whether obese (BMI ≥ 30) breast cancer survivors have greater CRF symptoms, increased inflammation and higher plasma free fatty acid levels.

Methods: A total of N=105 breast cancer survivors (4–36 mos. post-adjuvant therapy) reporting CRF levels ≥ 4 on the Symptom Inventory (0–10 scale) were classified based on obesity status: obese (OB; BMI ≥ 30 ; n=60), overweight (OV; BMI=25.0–29.9; n=28) and normal weight (NL; BMI=18.5–24.9; n=17). CRF symptoms were measured using the Multidimensional Fatigue Symptom Inventory Short Form (MFSI-SF). Inflammatory markers and plasma free fatty acids were assessed by blood draws. All analyses SAS 9.4.

Results: OB survivors had the highest levels of CRF symptoms based on the MFSI (OB=28.8 vs. OV 22.4 vs. NL 19.0; $p < 0.05$). Inflammatory markers, which are positively correlated with CRF, were higher in the OB group: CRP (OB=15.2 vs OV=14.5 vs NL=13.3; $p < 0.01$), IL-6 (OB=1.4 vs OV=1.2 vs NL=0.6; $p = 0.02$), and TNF- α (OB=2.5 vs. NL=2.1 vs OV=2.2 vs; $p < 0.05$). Plasma free fatty acids were also higher in the OB group: total fatty acids (OB=11.79 vs OV=10.57 vs NL=10.10; $p < 0.05$), saturated fatty acids (OB=4.03 vs OV=3.58 vs NL=3.35; $p < 0.05$), palmitic acid (OB=2757 vs OV=2399 vs NL=2213.70; $p < 0.05$) and triglycerides (OB=146.76 vs OV=110.71 vs NL= 85.70; $p < 0.05$). Increased levels of plasma fatty acids are associated with insulin resistance (IR). IR is tied to fatigue, impaired mitochondrial function and functional decline.

Conclusion: OB breast cancer survivors had significantly worse CRF symptoms, increased inflammation, and elevated plasma free fatty acids compared to NL survivors. Higher levels of inflammation and fatty acids may be promote CRF and increase the risk for co-morbid conditions including metabolic diseases. Future research evaluating CRF should consider the impact of obesity, inflammation and plasma free fatty acids on breast cancer survivors.

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C036

6:15 PM-7:15 PM

THOUGHT SUPPRESSION AND SEXUAL FUNCTIONING AMONG MEN WITH PROSTATE CANCER: THE ROLE OF STRESS AND FATIGUE

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Background: Suppressing cancer-related thoughts after male prostate cancer might contribute to declines in sexual functioning over time. According to the ironic processing theory, active engagement in thought suppression paradoxically increases unwanted thoughts. Moreover, such lapses in thought inhibition is shown to be greater under conditions of cognitive load or resource burden, such as fatigue and stress. Thus, unwanted accessibility of cancer-related thoughts might be related to declines in sexual functioning particularly when the individual is physically or cognitively taxed. This study examined the relationship of thought suppression and sexual functioning in male prostate cancer survivors, and the potential influence of load (i.e., fatigue and stress).

Methods: Adult men ($N=66$, M age = 65.76, $SD=9.0$) with a history of prostate cancer completed measures of sexual functioning, thought suppression, fatigue, and salivary diurnal cortisol at study entry (T1) and 4 months later (T2). Physical and cognitive load was measured using the fatigue subscale of the PANAS and by salivary diurnal cortisol (4 samples across the day for 3 consecutive days). Total daily cortisol output was computed using area under the curve (AUCg).

Results: Controlling for age, time since treatment, marital status, and T1 sexual functioning, regression analysis revealed that higher thought suppression at T1 was significantly related to lower sexual functioning at T2 ($\beta=-.27$, $p<.05$). AUCg moderated this relationship ($\beta=-.34$, $p<.01$) with a trend towards significance for fatigue ($\beta=-.19$, $p=.09$), such that higher thought suppression was more strongly associated with sexual functioning impairment at greater levels of cortisol output.

Conclusion: The extent to which men suppress unwanted cancer-related thoughts contributes to declines in sexual functioning over time. Men with more dysregulation in hypothalamic-pituitary-adrenal axis activity, and possible more fatigue, might be at heightened risk. Interventions aimed at reducing overall stress levels and alleviating fatigue might be particularly helpful for men who engage in cancer-related thought suppression.

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C037

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USING DECISION SUPPORT AND NAVIGATION TO INCREASE COLORECTAL CANCER SCREENING AMONG HISPANIC-LATINO PRIMARY CARE PATIENTS

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Background: CRC screening rates are low (<50%) in Hispanic/Latino primary care patients who are 50 to 75 years of age.

Methods: We identified Hispanic/Latino patients who were eligible for, but not up to date with CRC screening in five primary care practices in the Lehigh Valley Health Network (LVHN) in southeastern Pennsylvania. The research team consented and randomized 400 patients either to an SI Group ($n=203$) or a DSNI Group ($n=197$). A bilingual informational booklet, a stool blood test (SBT), and colonoscopy instructions were mailed to both the SI and DSNI groups. The DSNI Group also received a telephone call from a bilingual patient assistant who reviewed the screening materials, verified the participant's preferred CRC screening test and likelihood of completing his/her preferred test, and guided the participant through a test specific screening plan. A 6-month survey and 6- and 12- month medical records review data were used to assess participant screening adherence.

Results: At 12 months, CRC screening adherence was significantly higher in the DSNI Group than the SI Group (OR = 4.83, 95% confidence interval, CI: 3.08 to 7.58, $p < 0.001$). The DSNI Group, compared to the SI Group, also displayed a higher SBT screening rate (OR = 4.20, 95% CI: 2.63 to 6.70, $p < 0.001$), and a higher colonoscopy screening rate (OR = 8.79, 95% CI: 4.13 to 8.74, $p < 0.001$).

Conclusions: Among Hispanic-Latino primary care patients, a DSNI strategy achieved substantially and significantly greater positive effects on CRC screening adherence and test-specific screening adherence than an SI strategy.

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C038

6:15 PM-7:15 PM

WHAT HELPS PARENTS PROTECT THEIR CHILD FROM MELANOMA RISK?

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Melanoma is the most serious and potentially fatal form of skin cancer, ranked among the top five most prevalent cancers in the United States. Sun exposure during childhood can increase an individual's risk of melanoma in adulthood. Unfortunately, sun protection behaviors are often not pursued by parents and children. We developed and evaluated a web-based intervention to promote family communication and information exchange about risk reduction in melanoma families, with the objective of improving familial transmission of helpful information to encourage health behavior change. This paper presents baseline variables associated with parental enactment of sun exposure prevention and protection among children in families with a history of melanoma. Parents ($n=313$) were recruited and surveyed about their melanoma risk reduction behaviors and efforts to protect one of their randomly selected children from melanoma risk. Questions targeted sun exposure and screening behavior of parents, and exposure reduction variables in the selected child. Analyses focused on linear regressions associating risk reduction behaviors in children with parental behaviors, perceptions, and demographic variables. We created a scale by dichotomizing variables and performing a principal component analysis with varimax rotation, selecting a scale with six risk reduction variables ($\alpha = .85$). The resulting dependent variable focused on if children wore adequate sun protective clothing. Among parents surveyed, 80.5% reported inadequate protection and 19.5% reported adequate sun protection for their child. Of those who reported sufficient protection, 28.4% of parents practiced adequate protection across all domains explored. Multivariate regressions identified multiple variables about the parent that were associated with child protection and screening, including if the parents ever use sunscreen ($p<0.001$), use sunscreen of SPF 15 or greater for the past 12 months or when they knew they would be in the sun for at least 15 minutes ($p=0.024$ and $p=0.035$, respectively), how thickly and frequently they apply sunscreen ($p<0.001$); how confident parents felt in their ability to take note of abnormal skin marks through self-exam ($p=0.020$); how confident they were that they could make sunscreen application a regular part of their daily routine ($p=0.038$); how certain they were to use sunscreen while doing outdoor activities in the winter ($p<0.000$); and whether they wore protective clothing, such as long-sleeves or pants, when outdoors ($p=0.032$ and $p=0.003$, respectively). No demographic variables, other parental choices, or family history were significantly associated with child protection. These data have clear implications for targeting parents' child-protective behaviors. If parents use strong protective measures for themselves, they are more likely to use them for children.

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C039

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WHO USES VITAMIN D DURING BREAST CANCER TREATMENT AND SURVIVORSHIP AND THE EFFECTS OF USE ON HEALTH RELATED QUALITY OF LIFE.

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Background: Vitamin D supplements may prevent recurrence, prolong survival, and improve mood for women with breast cancer, although evidence for these effects is preliminary. Systemically, D may influence activation of the vitamin D receptor (VDR) in ways that correlate with increased survival in patients. The mechanism by which vitamin D might influence mood is less clear, but there is consistent evidence that there are receptors for vitamin D in the brain and that depression and a variety of mood disorders are associated with low levels of D in the blood.

Methods: This report describes D supplement use by 553 breast cancer patient/survivors: 193 who used an Integrative Oncology (IO) provider and 360 who did not (usual care; UC). Who participated in a matched cohort study of breast cancer outcomes.

Results: We found that more than half of breast cancer patients reported using vitamin D supplements at any specific time. In total almost 90% (n = 130) of patients in the IO and 73% (n = 262) of the patients in the usual care cohort reported ever using vitamin D supplements, excluding multivitamins, at the time of their enrollment in the study. Women in the IO cohort reported more use of D prior to diagnosis (n = 88, 60.7% vs 141, 39.2%; $p < 0.001$). Women who received care from Integrative Oncology providers in early survivorship also appear to be more likely to use vitamin D supplements than are women who use only conventional providers ($p < 0.05$). Approximately 30% of breast cancer patients with blood levels recorded in their medical chart were potentially D deficient (< 30 ng/mL). Multi-variate analyses controlling for cohort, time since diagnosis stage and other relevant variables found that D supplement use at study enrollment was associated with higher levels of self-reported health related quality of life (HRQOL) assessed using the SF-36 questionnaire at enrollment ($p < 0.05$). D use at enrollment also predicted better HRQOL at 6-month follow-up ($p < 0.05$) again controlling for a variety of potential confounders. Sufficient blood levels of D were also associated with better HRQOL ($p < 0.05$).

Conclusions: D supplementation by breast cancer patients is common both during and after treatment for breast cancer, but deficiency may also be common. Most supplement users use less than 2,000 IU daily, and our results suggest that this level of vitamin D supplementation improves HRQOL among women with breast cancer in early survivorship.

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C040

6:15 PM-7:15 PM

TESTOSTERONE MODERATES THE RELATIONSHIP BETWEEN POSITIVE AFFECT AND HEALTH BEHAVIOR

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Testosterone is a hormone released as the end product of the hypothalamic-pituitary-gonadal (HPG) axis. Testosterone is released in both men and women, and likely plays an important role in social functioning and motivation. Testosterone has been suggested as the reason for sex differences in behavioural dysregulation, which may explain sex differences in health outcomes. The purpose of this study was to examine the contribution of testosterone, positive and negative affect, and demographic variables on family history of cardiovascular disease and health behaviors. The sample (mean age 21.25, $SD = 6.08$) consisted of 89 female university students asked to complete self-report measures and a saliva sample. Participants self-identified as Latina (37.1%), European American (31.5%), Asian American (5.6%), African American (4.5%), or Mixed/Other (21.3%). For health-related behaviors and history, 44% of the sample endorsed eating 3–5 fruits/vegetables per day, 61% endorsed having a regular exercise program, reporting an average of 2.84 ($SD=1.75$) days exercised per week, and 46% endorsed getting an average of 7–8 hours of sleep per night. Related to substance use, 93% endorsed less than 3 caffeinated beverages per day, 67% denied use of any alcoholic beverages, and two participants endorsed smoking one cigarette per day. For history of medical conditions for self or family, 62% endorsed hypertension, 25% heart attack/myocardial infarction, 23% stroke, 67% diabetes, 56% high cholesterol, and 37% obesity. Hierarchical regression analyses found that testosterone moderated the relationship between positive affect and a composite health behavior score ($t = -2.33, p = .02, \text{Adj. } R^2 = .20, F(5, 81) = 5.38, p < .001$), such that the healthiest behaviors were observed in participants with high positive affect and low testosterone. Furthermore, analyses found that negative affect ($t = 2.68, p = .009$) and testosterone ($t = 2.04, p = .045$) predicted family history of cardiovascular disease ($\text{Adj. } R^2 = .12, F(5, 81) = 3.29, p = .009$). Findings remained after adjusting for oral contraceptive use, income level, relationship status and ethnicity. The Positive Affective Neuroendocrinology perspective proposed by Welker, Gruber and Mehta (2015) provides a synthesis of research on the connection between testosterone and behavioural dysregulation via reward motivation, but few empirical studies have examined these relationships in females. These results provide a preliminary foundation for future research examining the interplay of neuroendocrine function, psychological factors, and behavior. Further empirical studies can focus on expanding this research in larger, representative samples.

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C041

6:15 PM-7:15 PM

ASSESSMENT OF EARLY CHILD CARE AND EDUCATION NEEDS AND PLANNING IN A RURAL REGION

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Background: Young children who have mastered skills in three core areas—regulation of emotion, behavior, and attention; language, reasoning, and problem solving; and relating well to others and forming friendships—experience greater success when compared with those failing to develop such capacities. Poverty and geographic remoteness present unique challenges to families in many rural communities including limited availability of a trained early childhood workforce, low wages for child care and early education professionals, and changing demographics.

Objective: The purpose of this study was to identify community health/wellness needs with a specific focus on child care and education as these were identified as critical priorities in a 2016 community health assessment study.

Methods: Seven focus groups were conducted with parents, grandparents, older adults, and child care providers in a very rural county of a Midwestern state. The purpose of the discussions was to identify perceptions of the availability of current child care, characteristics of “ideal” child care providers/settings, and input regarding inter-generational shared site care. Key informant interviews conducted with employers assessed their perceptions of the impact of current early child care and education on their businesses. Data were collected in July/August 2017.

Results: Fifty nine people participated in focus groups. They identified characteristics of “ideal” child care as: licensed, CPR and First Aid certified, with specific training in early child care and education, structured educational activities, and availability of evening, weekend, drop-in, and sick care. Discussion of inter-generational shared site care among all groups focused on shared time, shared space, and participation choice. Child care providers expressed concerns about perceived state “over-regulation.” Thirteen employers completed phone interviews, identifying absenteeism, lost productivity, and scheduling as negative impacts on lack of reliable child care. The majority thought increased access to flexible child care would improve recruitment (69%), reduce absenteeism (54%), increase productivity (54%), and reduce turnover (62%). The majority (93%) stated that early child care and education should be a concern for their company and the county.

Conclusion: Early child care and education is a community issue with multiple stakeholders who need to be engaged in planning. Follow-up studies in very rural communities are needed to identify viable models.

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C042

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EFFECTIVENESS OF A BREASTFEEDING SUPPORT INTERVENTION AMONG WOMEN WITH HIGH-RISK PREGNANCIES

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Evidence suggests that breastfeeding duration is associated with reducing maternal postpartum weight; however, there is limited evidence of effective programs that aim to improve length of breastfeeding among high BMI women. High BMI women experience low breastfeeding rates due to an increased likelihood of high intervention births, delayed lactogenesis II, postpartum edema, polycystic ovarian syndrome, gestational diabetes, and psychosocial factors (e.g., body image concerns). In Kansas, even though 79% of women with a BMI ≥ 25 initiate breastfeeding, only 29% still breastfeed at 6 months postpartum. This is a reduction of 63%, or nearly 2 out of every 3 women no longer breastfeeds at 6 months. Given current recommendations that infants be exclusively breastfed for the first 6 months, a two-hour breastfeeding class was offered during the 2nd trimester to high BMI pregnant women. The purpose of the study was to determine breastfeeding self-efficacy, and to determine knowledge retention after completing the breastfeeding class. Study design was a single-sample, pre-post design with two data collection points. The breastfeeding curriculum was based on the Office on Women’s Health “Your Guide to Breastfeeding” and aligned with nutritional requirements set by the U.S. Department of Agriculture’s Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Preliminary findings indicate that participants’ average BMI was 32.4, average age was 28, 50% were non-Hispanic white followed by 25% Hispanic, 50% had some college or less, and 56% earned $< \$50,000/\text{year}$. Breastfeeding self-efficacy increased and retention of knowledge improved on the following factors: breast milk composition and infant growth, supply and demand, nursing positions, establishing a milk supply, identification of hunger cues, infant weight loss, engorgement, understanding growth spurts, benefits of exclusive breastfeeding, and the effect of substance use on breast milk. Participants had limited knowledge regarding breastfeeding pain, actions to take when baby has trouble breastfeeding, and the impact of formula use in the early days on breast milk supply. Study results present opportunities for additional education and will help enhance the breastfeeding curriculum. Additional follow-up studies are underway to assess breastfeeding behaviors after birth, with a specific focus on nutrition counseling and physical activity guidance for high BMI women.

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C043

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IMPACT OF THE BABY-FRIENDLY HOSPITAL INITIATIVE ON BREASTFEEDING AND MATERNAL AND INFANT HEALTH IN THE UK: A SYSTEMATIC REVIEW.

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The Unicef UK Baby Friendly Initiative (BFI) is designed to support women to initiate and continue to breastfeed and maximise maternal and infant health outcomes. Global evidence demonstrates that adherence to BFI has a positive impact on short and long-term breastfeeding (BF) outcomes, but this evidence has not been comprehensively stratified by country according to income. In particular, studies examining the efficacy of BFI in high-income countries have yet to be synthesised. Given prolonged, and very low breastfeeding rates in the UK, establishing the impact of BFI in this setting is important. The primary aim of this narrative systematic review was to examine the impact of BFI implementation on breastfeeding and other maternal and infant health outcomes in the UK. Electronic searches were performed using specific keywords and hand searches of reference lists of included articles were conducted. All study designs were considered if they assessed breastfeeding outcomes and/or maternal and infant health outcomes in a UK hospital or community setting with full or partial implementation of BFI steps. 176 studies were identified, of which 13 were eligible. Two authors independently extracted data including study design, participants, and results. Preliminary findings highlight a paucity of robust evidence to support the impact of BFI on improved breastfeeding and maternal and infant health outcomes in a UK setting. Only two trials have been conducted in BFI settings and both indicate that the benefits of the current strategy for breastfeeding outcomes are transient and not sustained. There was no evidence available examining the impact of BFI on physical health outcomes for mother or infant. However, qualitative data indicates that the current approach to infant feeding promotion and support in higher-income countries may be paradoxically related to significant issues with maternal mental health and may need to be situationally modified. There is urgent need for further evaluation of BFI in UK settings to identify barriers to breastfeeding success and eliminate risks to maternal emotional wellbeing. Studies examining the impact of BFI-UK on broader maternal and infant health outcomes, alongside breastfeeding indicators, are also necessary. Conclusions point to tensions with BFI-UK in its current form and provide evidence-based suggestions for modification of the initiative to enhance care for mothers and infants in the UK.

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C044

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PIONEER BABY: BUILDING COMMUNITY INFRASTRUCTURE TO IMPROVE MATERNAL-CHILD HEALTH IN A RURAL MIDWESTERN REGION

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Background: A health collaborative called “Pioneer Baby” was established in response to an alarming number of pregnancies complicated by gestational diabetes mellitus in a rural region of a Midwestern state. Gestational diabetes is associated with increased maternal and neonatal morbidity and mortality. Partners include a medical school, local healthcare providers, a regional health system, and the state’s health department.

Objective: The purpose of this study was to identify community health/wellness priorities in a three-county area. This presentation will identify strategies to improve maternal-child health outcomes.

Methods: First, to learn about the characteristics and health behaviors of reproductive age women in the catchment area, a pilot health assessment was completed (N=175). Half of respondents were Hispanic of low socio-economic status. During pregnancy, three-quarters of women were overweight/obese, did not exercise, and had a family history of diabetes. Findings from a qualitative follow-up study within this same community indicated that women had limited access to health promotion programs. Second, to further guide the design for intervention programming aimed at promoting healthy behaviors, a comprehensive survey targeting a three-county area was conducted to identify barriers to improving community health.

Results: More than 50% of all households in each county responded to the survey. Preliminary findings indicate that of the female respondents (N=1,224), nearly two third (64%) were non-Hispanic white followed by 25% Hispanic, average age was 45, and 40% earned less than \$50,000/year. Women reported that they wanted the following healthcare/public health services in their respective counties: diabetes prevention support (59%), diabetes management support (56%), diet counseling (48%), weight management coaching (73%), pregnancy care (56%), specialized breastfeeding support (71%), peer breastfeeding support (65%), and breastfeeding support through a clinic at the health department (65%) or hospital (76%). Within their places of work, women wanted access to exercise facilities (41%), access to healthy food options (59%), access to a private breastfeeding space at work (81%), and health education (55%). Women also reported a need for high-risk obstetrical care (83%). Follow-up focus group sessions were conducted and preliminary findings confirm survey results.

Conclusion: Collectively, Pioneer Baby and its partners use study results to plan and implement community health improvement strategies leading to improved maternal and child health outcomes.

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C045

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EXAMINING UNCERTAINTY IN ILLNESS IN PARENTS AND CHILDREN WITH CHRONIC KIDNEY DISEASE AND SYSTEMIC LUPUS ERYTHEMATOSUS

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Children with chronic kidney disease (CKD) and systemic lupus erythematosus (SLE) have uncertain prognoses and unpredictable cycles of remission and relapse, which may result in parent and child uncertainty, which can be appraised as an opportunity or a danger. Children tend to negatively appraise uncertainty, leading to distress. Children with CKD/SLE often experience internalizing symptoms and low health related quality of life (HRQOL), but the factors influencing adjustment are not fully understood. Child and parent uncertainty relate to child anxiety and depression, and to each other. Illness uncertainty is also related to HRQOL. One study of other pediatric conditions found maternal uncertainty to have an indirect effect on child depressive symptoms through child uncertainty, suggesting a potential mechanism of child adjustment.

This study expanded previous research by examining child uncertainty as a mediator between parent uncertainty and child outcomes of depression, anxiety, and HRQOL in the CKD/SLE population, which has not yet been explored. Participants were 31 parent-child dyads with CKD (N=9; Stage 1, 2 or nephrotic syndrome) or SLE (N=22) recruited from nephrology and rheumatology outpatient clinics. Using a secure online database, parents completed a demographic form and The Parents' Perception of Uncertainty in Illness Scale. Youth (ages 9–18) completed The PROMIS Depression and Anxiety Short Forms, The Child Uncertainty in Illness Scale, and The Pediatric Quality of Life Scale.

Significant correlations were found between child and parent uncertainty ($r=.47$, $p=.007$) and child uncertainty with anxiety ($r=.50$, $p=.005$) and HRQOL ($r=-.51$, $p=.004$). The percentile bootstrapping method generated 10,000 samples to derive the indirect effect; confidence intervals set at 95%. Results found child uncertainty mediated the relationship between parent uncertainty and all three child outcomes: depression ($b=.267$; CI=.01, .34), anxiety ($b=.304$, CI=.05, .34), and child-reported HRQOL ($b=-.26$, CI=-.52, -.06). Results extended previous research to understudied conditions (CKD/SLE) and to variables not previously studied as indirect outcomes of parent illness uncertainty, namely anxiety and HRQOL. Findings allow health care professionals to understand the impact of parent and child uncertainty on child adjustment. It is important to address the appraisal of ambiguity in illness through cognitive interventions with both the parent and child, as both ultimately impact the child's wellbeing.

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C046

6:15 PM-7:15 PM

SOCIOECONOMIC ADVERSITY, SOCIAL RESOURCES, AND ALLOSTATIC LOAD: RESULTS FROM THE STUDY OF LATINO YOUTH

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Childhood socioeconomic adversity negatively impacts physical and mental health across the lifespan. Resilience models posit that some individuals continue to thrive despite significant adversity, because they benefit from individual or contextual protective factors. The current study examined associations among socioeconomic adversity, social resources, and allostatic load in N=1324 Hispanic/Latino youth (50% male; ages 8–16) from the Study of Latino youth (SOL Youth), who are at high risk for obesity and related cardiometabolic risks.

The Hispanic Community Health Study/Study of Latinos (HCHS/SOL; 2008–2011) is a population-based study of 16,415 self-identified Hispanics/Latino adults from four urban US communities. SOL Youth recruited youth offspring of HCHS/SOL participants and their primary caregivers between 2012–2014. Youth participants underwent a fasting blood draw and anthropometric assessment, and youth and caregivers provided social and demographic information. A composite indicator of allostatic load represented dysregulation across general metabolism, cardiovascular, glucose metabolism, lipid, and inflammation/hemostatic systems. Socioeconomic adversity was a composite of caregiver education, employment status, economic hardship, family income relative to poverty, family structure, and receipt of food assistance. Social resources was a composite of family functioning, parental closeness, peer support, and parenting style variables.

Multivariable regression models that adjusted for sociodemographic factors, design effects, and sample weights revealed a positive relationship between socioeconomic adversity and allostatic load ($\beta=.10$, $p=.035$). Further, greater socioeconomic adversity related to lower social resources ($\beta=-.10$, $p=.013$). Neither the association of social resources with allostatic load ($p>.05$) nor the compound paths comprising the indirect effect from socioeconomic adversity to allostatic load via social resources were statistically significant (MacKinnon's 95% Asymmetric CI -.002 to .008).

Statistically significant, but modest associations of socioeconomic adversity with both allostatic load and social resources were identified in the current study. This may partially reflect range restriction given overall high adversity and high social resources among our Hispanic/Latino youth cohort. There is an urgent need to examine social risk and protective factors shaping health risks in Hispanic/Latino youth, to inform prevention and intervention efforts that can disrupt health-damaging trajectories before initiation of chronic diseases.

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C047

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THE IMPACT OF PILOT STUDIES TO INFORM META-ANALYSES:
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Meta-analyses quantify and summarize the results from multiple studies on a specific topic to create a more robust understanding of the state of a given field. These aggregate analyses are often used to as the foundation to develop public policy and evidence-based recommendations for public health interventions. The studies included in meta-analyses, therefore, should only be of the highest methodological quality to produce results with the highest validity and reliability. Pilot studies, which can be a single study or group of studies designed to test the feasibility of an intervention and/or provide initial evidence of an effect in the hypothesized direction, are commonly conducted prior to a well-powered higher quality randomized trial. Pilot studies are often of lower methodological quality, include small sample sizes, are short in duration, and delivered by highly trained interventionists. Within the last 10 years, the publication of pilot studies has accelerated; resulting in pilot studies populating meta-analyses. The purpose of the current study is to reanalyze two published meta-analyses that informed the recommendations for family-based activity interventions and intensive behavioral interventions for pediatric weight management that included pilot studies. The first study analyzed by Brown et al. included family based interventions (n=19, n=15 pilot). The effect size reported from the analysis was 0.40 (0.22, 0.57). When reanalyzed and the pilot studies were removed, the non pilot studies did not reach statistical significance with effect size 0.51 (-0.28, 1.30). The second study reanalyzed included interventions that were focused on child BMI reduction in health care settings (n=37, n=21 pilot). The reported effect size -0.36 (-0.51, -0.21) was similar to the non pilot only effect size in this case, -0.36 (-0.68, -0.41). The inclusion of these pilot studies leads the authors to one conclusion, where if the studies were left out, we reach a different result entirely. Pilot studies, if included in analyses, need to be held separately from full powered trials.

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C048

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A LONGITUDINAL EXAMINATION OF ADOLESCENT MEDIA USE
AND SEXUAL SOCIALIZATION

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While the rates of some STIs and unplanned pregnancy among youth have stabilized, or at best, undergone a modest decline over the past few years, the incidence, transmission, and prevalence of STI/HIV, unintended pregnancy and other negative sex-related outcomes still comprise a significant, complex and costly social and public health issue for youth in the United States. Across various disciplines, multiple theorists have attempted to describe the factors that shape sexual behavior, health and sex-related outcomes in youth, as they develop over the life course. Biological, psychological, and social factors – including socialization – all contribute the development of adolescents, as they transition from childhood to early adulthood. During this critical developmental period, media functions as a salient socializer for youth. Myriad studies have described the link between the use of conventional forms of media (i.e., television, radio, video, print media) and youth sexual attitudes, intentions, behaviors, and health statuses.

Drawing on a conceptual framework for adolescent media sexual socialization and using nationally-representative, longitudinal, public-use data from the National Longitudinal Study of Adolescent Health (Add Health) (N=3,126), this study critically examines the influence of media use on sexual socialization across adolescence, and if this relationship is moderated by race and gender. To address the research question, multiple linear regression was conducted to assess if media use during adolescence predicted sexual socialization across five measures (i.e., sex knowledge, perceptions of sex risk, beliefs about pregnancy, perceived birth control efficacy, myths about birth control) later at follow-up at wave 2.

Media use remained a statistically significant predictor of sexual socialization across the five domains examined, when controlled for race and gender. After data were dis-aggregated by race/ethnicity (e.g., non-Hispanic White, non-Hispanic Black, Hispanic, Asian/Pacific Islander, Native American/American Indian, and Hispanic) and gender (e.g., male, female), the effect remained for White youth and both males and females.

As media is a conduit, conveying images, messages and representations about society, and as youth are embedded in the hegemonic context of greater society in the U.S., youth's experiences with media and sexual socialization are gendered and racialized. This differentiated socialization has potential ramifications for the emergence and development of sexual behavior across adolescence. Adolescents, while seeking out information to make sense of their evolving sexual worlds, may turn to media for self-socialization in order to support their transition to adult roles and behaviors. Policy, practice, and research implications of findings are discussed.

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C049

6:15 PM-7:15 PM

ANALYSIS OF SCREEN TIME POLICIES IN LOUISIANA CHILD CARE CENTERS

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Background: Children often spend more time in front of an electronic screen than engaged in physical activity (PA). Early care and education (ECE) centers have the opportunity to reduce screen time during the preschool years and help children meet PA recommendations.

Purpose: To examine Louisiana ECE centers' compliance and perspectives regarding the Louisiana Department of Education's policies on screen time. The policies state that electronic device activities for children under age two are prohibited, and time allowed for electronic device activities for children ages two and above shall not exceed two hours per day.

Methods: In-depth telephone interviews using a structured interview protocol were conducted with 12 licensed, ECE center directors in Louisiana. Centers were randomly selected within center license type (Type I, II, or III). Interviews assessed how each of two policies were implemented, communicated, monitored, enforced and evaluated. Interviews were transcribed and coded and thematic analysis was conducted.

Results: All twelve centers implemented both screen-time policies, with eight centers (66%) implementing policies stricter than the state policies. Centers used a combination of training and verbal reminders to communicate the policies to staff and used a parent handbook to communicate the policies to parents. Daily walk-throughs were the most common method employed by the center directors for monitoring the policies. Enforcement of the policies varied by center but a majority had consequences in place for staff who failed to follow the policies. No formal evaluation was done by any center regarding the policies, but a majority (66%) had not noticed any negative results from the policies.

Conclusion: Communication changes are recommended for the Louisiana Department of Education to help inform all centers of screen time policies and available resources. Consideration should be given to creating stricter screen time policies that focus on screen time for educational purposes only.

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C050

6:15 PM-7:15 PM

ASSOCIATIONS WITH AFFIRMING HEALTHCARE EXPERIENCES AND SEXUAL MINORITY YOUTH'S PERSPECTIVE ON FAMILY FORMATION.

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Background: While a majority of sexual minority youth (SMY) desire to have children, they are less likely to become parents than heterosexual adults. Healthcare experiences have shown important associations with attitudes about family formation and fertility preservation in both heterosexual and SM cancer survivors. To date, no study has examined the association between interest in starting a family and healthcare experiences among non-clinical populations of SMY. The current study will fill this gap by examining the role of SM-affirming healthcare on SMY's attitudes about family formation.

Method: The current study analyses data from a larger ongoing study exploring ethical issues associated with HIV prevention among LGBTQ: the Adolescent Scientific Access Project (ASAP!). The sample was composed of 231 cisgender SMY aged 14–17 ($M=16.46$, $SD=1.05$). A majority of participants were male (55%) and 65.2% identified as youth of color. Youth answered questions on SM-affirming healthcare, interest in having children in the future, and frequency of communication about fertility with their peers, parents, and healthcare providers. Multiple regression models were used to examine differences in SMY's interest in family formation by demographics and SM-affirming healthcare experiences.

Results: 68.3% of SMY were interested in having children someday. Female youth were significantly less interested in having children compared to male participants ($OR=.54$, $CI:.31, .96$). Youth who reported their doctor as helpful with LGBQ sexual health issues were more interested in having children overall ($OR=1.67$, $CI:1.12, 2.48$) but less interested in adoption ($OR=.65$, $CI:.44, .96$). SMY with helpful providers thought more often about having biological children ($B=.21$, $CI:.04, .39$). In contrast, those who worried that their provider would not be accepting of their sexual orientation thought less often about having children ($B=-.11$, $CI:-.21, -.01$).

Discussion: The current study found showed that family formation is important to SMY. It also expanded on previous literature by demonstrating a significant association between SM-affirming healthcare providers and SMY's interest in family formation. Those with affirming healthcare providers were more likely to be interested in having children. This has important implications. Healthcare providers need training in SM issues, which can enable them to provide a safe platform for conversations about family formation.

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C051

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COMMUNITY PEER MENTORING TO IMPROVE SELF-MANAGEMENT IN YOUTH WITH INFLAMMATORY BOWEL DISEASE

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Background: Managing inflammatory bowel disease (IBD; Crohn's disease, ulcerative colitis) is a significant challenge, not just medical management but also managing the effects of IBD on life, particularly in the areas of quality of life and daily functioning. Unpredictable and embarrassing symptoms, and the stigma that 84% of patients experience present barriers to optimal health. A community intervention such as mentoring may be well-suited for improving these areas of self-management: Peer mentors normalize the experience of IBD, reduce disease-related stigma, and engage in activities in the community, promoting generalization and independence in ways that traditional interventions do not. We worked with patients, parents, and Big Brothers Big Sisters (BBBS) to develop a multi-faceted peer mentoring program to improve self-management in youth with IBD. This pilot study assessed feasibility and preliminary outcomes.

Methods: Youth with IBD (10–17 years) were randomized into the Mentoring Program or an Enhanced Education comparison group (n=15 each). Mentors with IBD were recruited and matched with mentees. The Mentoring Program was a year-long, 1:1 mentee-mentor partnership with weekly contact (e.g., text, phone), and in-person contact 1–2 times per month, including educational group activities. The Enhanced Education group was a website with a self-management workbook and educational information from the Mentoring Program educational group activities. Participants completed assessments pre-randomization and post-intervention.

Results: Feasibility was demonstrated via mentee recruitment rate (59% of target population), mentor screening (31% rejection/withdrawal rate similar to BBBS), retention (98% over 1 year), program engagement ($M=1.6$ contacts per week; 71% attended expected group activities), and satisfaction with program (87% overall). Gender moderated preliminary outcomes: Girls in the Mentoring Program had the best outcomes post-intervention in both improved total QOL ($M_{diff}=10.01$, $p<.05$) and functional disability ($M_{diff}=4.89$, $p<.05$). In the Mentoring group, 82% achieved remission post-intervention vs. 67% in the comparison group.

Conclusions: The Peer Mentoring Program was feasible, and preliminary data suggest it improves quality of life and daily functioning. Peer mentoring may serve to extend our reach to important nonmedical areas of self-management and to stigmatized youth who may not otherwise participate in self-management interventions.

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C052

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EFFECTS OF GENERAL AND DOMAIN-SPECIFIC PARENTAL MONITORING ON THE LIFESTYLE BEHAVIORS OF HISPANIC YOUTH IN A FAMILY-BASED TRIAL

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While some studies show that changing general positive parenting practices (e.g., monitoring youth whereabouts) may be sufficient to improve youth lifestyle behaviors, others indicate parents should use domain-specific strategies (e.g., monitoring youth dietary intake). To test the effects of Familias Unidas for health & wellness (FUHW), a family-based obesity prevention intervention on general and domain-specific parental monitoring and the effects of parental monitoring on lifestyle behaviors (sugar intake, fruit/vegetable intake, physical activity) at 6 months post intervention, three structural equation models were estimated (n=280 Hispanic families). Adolescents with unhealthy weight (43% overweight, 44% obese, 12% severely obese, 52% female, 13.0 ± 0.8 yrs old, 36% immigrants) and their parents (88% female, 44.9 ± 6.5 yrs old, 91% immigrants) were randomized to FUHW or community practice as usual. FUHW is a 12-week intervention that focuses on enhancing family functioning to improve adolescent diet and physical activity. A latent variable of general parental monitoring was created using parent responses on the Parental Monitoring and Parent Relationship with Peer Group Scales. Parents self-reported domain-specific monitoring using the Parent Strategies for Eating and Activity Scale, and adolescents self-reported their diet and physical activity using the NHANES Dietary Screener Questionnaire and the Physical Activity Questionnaire, respectively. Analyses were run using Mplus with Full-Information Maximum Likelihood estimation. All models controlled for parenting variables and adolescent outcomes at baseline and provided an adequate fit to the data (e.g., sugar model χ^2 (df) = 37.55 (19), $p < .05$) and general monitoring at post intervention ($b=.16-.17$, $p < .05$) positively influenced domain-specific monitoring at post intervention. Domain-specific monitoring at post intervention was negatively associated with adolescent sugar intake ($b=-.19$, $p < .05$) but not with increased fruit/vegetable intake or physical activity. These findings demonstrate the positive effects of a family-based intervention on parental monitoring of adolescent diet. More importantly, they highlight the importance of targeting domain-specific parental monitoring to successfully reduce sugar intake in a sample of Hispanic adolescents with unhealthy weight.

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C053

6:15 PM-7:15 PM

EMPIRICAL EVALUATION OF BEHAVIORAL HEALTH PROVIDER SERVICES IN CHILD WELFARE

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Child welfare jurisdictions employ many different types of service providers to meet the diverse behavioral health needs of children in their care. The question is: are these providers meeting the needs of these children? With behavioral outcome data from the children and placement services data, it is possible to evaluate the comparative effectiveness of providers with youth in a specific child welfare jurisdiction and identify gaps in service delivery. This project summarizes the placement data of a child welfare jurisdiction in the US. The services occurred between January 2015 and April 2017. The sample includes 530 children and adolescents for whom initial and follow up data were available. Behavioral health outcome data were collected using the Treatment Outcome Package (TOP). The TOP (e.g., Kraus et al., 2005) is an empirically validated well-being assessment that is used in behavioral health and child welfare settings. The Child TOP (for ages 3 - 13) is completed by the legal guardian and measures 13 domains. The Adolescent TOP (for ages 11 - 21) is completed by the adolescent and measures 11 domains. Additional raters who know the child well (e.g., caseworker, teacher) are also asked to complete the TOP. Both instruments assess Depression, Attention Problems, Conduct Disorders, Violence, and Suicidality. Participants endorse each item between "1=All" to "6=None of the Time" for the past two weeks. Provider evaluation scores are based on the average of all TOP scores per youth from first 30 days (initial score) and from the last 30 days (follow up score). Each youth's score is weighted to ensure that providers who work with children who have more challenges than others do not have to meet a higher threshold for a positive outcome. A review of the Provider Scorecard for this jurisdiction revealed that of the 18 providers who had served at least 10 children (range 10 - 214), less than 25% had change scores above the national average for Depression, Violence, Lack of Resiliency, Social Conflict, and Work/School Functioning. This analysis helps pinpoint specific behavioral health resources lacking in this community as well as the providers who are performing comparatively worse than others. Child welfare jurisdictions have found this to be a very valuable tool in contracting and resource allotment. Comparisons of gaps across multiple jurisdictions will be shared to highlight opportunities for behavioral health service improvement.

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C054

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EXAMINING THE RELATIONSHIP BETWEEN ADOLESCENT SLEEP AND MENTAL DISTRESS IN AMERICAN INDIANS ADOLESCENTS

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Background: During adolescence, significant changes occur in sleep patterns (e.g., decreased duration and increased sleep problems). To date, studies have not examined the relationship between sleep duration and mental distress among American Indian adolescents (AIAs).

Method: A secondary analysis of New Mexico Youth Risk and Resiliency Survey (YRRS) data (N=15,930) was used to examine the relationship between sleep duration and mental distress (i.e., feeling sad or hopeless almost every day for two weeks or more during the past 12 months) among adolescents age 14–18.

Results: AIAs, as compared to other races and ethnicities, who had < 8 hours of sleep, were significantly (AOR=1.57; CI=1.35–1.82) more likely to experience mental distress when controlling for other variables.

Implications: Existing studies demonstrate that short sleep duration is related to various negative mental health outcomes. Therefore, additional research and culturally-informed interventions are needed to fully understand this association and promote healthy sleep among AIAs.

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C055

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FACTORS RELATED TO POST-TRAUMATIC GROWTH RESULTING FROM CHILDBIRTH

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Introduction: Childbirth is a challenging life event from which negative and positive psychological outcomes may emerge. Research has focused primarily on negative outcomes such as post-traumatic stress disorder (PTSD). The few studies of post-traumatic growth (PTG) document its occurrence and identify several correlates. The purpose of this research is to expand our knowledge about factors related to PTG resulting from childbirth.

Method: Participants: Women who gave birth to a living child in the past 1–3 months (N=183) were recruited from social media and message boards. Characteristics: M_{age} = 29 years; majority White, married, minimum 2-year college degree, employed full- or part-time; 64% primiparous, 51% pregnancy complications, 61% birth complications. Infants: 37% neonatal intensive care unit (NICU) admittance, 26% PTB, 27% LBW. Online survey assessed demographic, pregnancy/childbirth characteristics, childbirth appraisals, PTG (shortened PTGI), bonding (shortened PBQ), and symptoms of PTSD (PCL-5), anxiety (HADS-A) and depression (EPDS); and NICU stress (PSS: NICU) in mothers of babies in the NICU.

Results: At least moderate degrees of PTG were reported by 40% of the sample. Greater PTG for those living separately from baby's father ($M=46.36$) compared to those cohabiting ($M=35.11$), $t(158)=-2.92$, $p=.004$, and for primiparous ($M=37.41$) compared to multiparous ($M=33.27$), $t(158)=-2.02$, $p=.045$. PTG not related to NICU admittance. Childbirth appraisals: PTG not related to appraisal of childbirth as traumatic; PTG related to greater control over self ($r=.16$, $p=.040$) and support from healthcare providers ($r=.27$, $p=.001$) and family/friends ($r=.28$, $pr=.46$, $pr=.31$, p

Conclusions: These findings add non-cohabiting, NICU stress, and bonding as factors related to PTG, and further document PTG relates to first-time birth and does not relate to postpartum emotional distress. Findings conflict with prior reports of PTG negatively relating to maternal age and education, and not relating to support and control during childbirth (perhaps due to assessment being closer to birth). Surprisingly, PTG was not related to traumatic childbirth appraisal or NICU admittance. These findings can inform perinatal interventions of the potential for personal growth resulting from childbirth.

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C056

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FOOD INSECURITY AND OBESITY AMONG LOW-INCOME MEXICAN ORIGIN CHILDREN: THE MODERATING ROLE OF HAIR CORTISOL.

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Food security, the level to which food is considered stable and adequate in a home, is a growing problem in the United States, with low-income minority youth disproportionately affected. Somewhat paradoxically, research has found that some children with greater food insecurity are more likely to become overweight or obese (Dietz, 1995). Researchers have cited cheaper cost of food, adaptive overeating, and metabolic changes as possible mechanisms for this association (Casey et al., 2006). One important factor by which food insecurity influences weight may be the accumulation of chronic stress associated with food scarcity and other poverty related stressors (Alaimo, Olson & Frongillo, 2001; Drewnowski & Specter, 2004). Drawing on a low-income urban minority sample, this study aims to examine how food insecurity relates to childhood zBMI, and whether the influence of food insecurity on zBMI varies based on levels of chronic stress assessed via accumulation of hair cortisol. Participants were 50 Mexican-origin immigrant families with a child aged 6–10 years ($M=8.44$, 46% female). Anthropometric measurements were used to calculate child zBMI based on CDC growth charts (Kuczmarski et al., 2002). Hair samples were collected using thinning shears during home visits and assayed for hair cortisol levels. Primary caregivers rated 1-item measure of food insecurity utilized in the annual USDA food surveys and NHANES (Keenan, Olson, Hersey, & Parmer, 2001).

Children's zBMI scores ranged from -1.66 to 2.72 ($M = 0.87$); 12% were overweight (BMI > 85th percentile) and 34% were obese (BMI > 95th percentile). Hair cortisol levels before log transformations ranged from .53 to 369.60 pg/mg ($SD = 63.44$). Forty-four percent of primary caregivers reported not always having the kinds of food they want to eat and 8.2% reported sometimes not having enough food to eat. A multiple regression moderation analysis was conducted using PROCESS (Hayes, 2013). Hair cortisol significantly moderated the relation between food insecurity and zBMI when controlling for age and gender ($b = 0.28$, $p = .05$). Food insecurity was only associated with higher zBMI for children with the highest accumulation of hair cortisol. This finding expands upon previous research linking food insecurity to excess adipose among children, showing that hair cortisol strengthens this association. Food insecurity may only be associated with obesity for children who are exposed to prolonged chronic stress and subsequent dysregulation of the stress response system. These findings have clinical implications for the treatment of childhood obesity among low income Mexican-origin populations, including the importance of stress reduction techniques.

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C057

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FORMATIVE DEVELOPMENT OF A FAMILY-BASED EHEALTH OBESITY PREVENTION INTERVENTION FOR HISPANIC PARENTS AND ADOLESCENTS

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Background: Obesity disproportionately affects Hispanic populations, with 22.8% of Hispanic adolescents currently classified as obese.¹ The family system is especially important in the Hispanic community, yet there is surprisingly little research examining the effects of family-based obesity prevention programs in Hispanic adolescents. Because Hispanics (94%) are more likely than non-Hispanic whites (85%) to access the internet via a mobile device,² an innovative way to package family-based interventions for this population may be through the use of web and smartphone technology.

Aim: To engage in the initial iterative stages of user-centered design for developing a family-based eHealth obesity prevention intervention for Hispanic families by 1) exploring parents' and adolescents' perceptions and current use of technology for their health, and 2) eliciting their feedback on preliminary intervention ideas.

Methods: Hispanic adolescents ($n=20$, 13.6 ± 1.0 years old, 68% female, 32% US-born, 74% normal weight, 26% overweight) identified as at-risk for obesity (due to not meeting national recommendations for fruit/vegetable intake, physical activity, or sedentary behavior) and their parents ($n=20$, 43.7 ± 5.9 years old, 90% female, 74% married, BMI: 30.5 ± 12.4) participated in either one of two focus groups or 15 individual interviews. Transcripts were analyzed using a rapid assessment process³.

Results: Participants reported using technology for their health in limited ways (e.g., to search for medical symptoms, recipes, and workout routines on the internet). Most reported not having any health-related apps installed on their smartphones. When asked to describe features they liked about either health apps or their favorite apps more generally, parents and adolescents described the importance of interactive and social features (e.g., ability to view and/or upload photos/videos, communicate with others). Participants additionally suggested several ways to make a family-based intervention interactive (e.g., messaging between parents/adolescents, gamification/point system and competition between family members).

Conclusions: Understanding the needs and preferences of end users to inform intervention content and usability is of utmost importance in the technology development process. Input from Hispanic parents and adolescents in the present study is being used to develop intervention mock-ups for subsequent rounds of user-centered testing.

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C058

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IDENTIFYING THE PREVALENCE OF PROJECT HEALTHY SCHOOLS CHILDREN AT HIGH RISK FOR CARDIOVASCULAR DISEASE AND METABOLIC SYNDROME

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Introduction: Recent studies have shown that 6.8% of overweight children in the United States meet criteria for metabolic syndrome (MetS), placing these children at increased risk for developing cardiovascular disease (CVD) and other health complications. This study analyzes the prevalence of middle school students at high-risk for CVD, evaluates whether the school-based intervention Project Healthy Schools (PHS) improves CVD risk factors, and assesses if a sub-population of high-risk children also meets criteria for MetS.

Methods: PHS promotes healthy behaviors in Michigan sixth-grade students through education and environmental changes. Height, weight, blood pressure (BP), random glucose, and lipid panel data were collected between 2004–2017 from students who, with their parents, consented to physiological screening. Students were considered high-risk for CVD if they had ≥ 1 of the following criteria: BMI > 85 th percentile, total cholesterol (TC) ≥ 200 mg/dL, HDL cholesterol (HDL-C) ≤ 35 mg/dL, LDL cholesterol (LDL-C) ≥ 130 mg/dL, random glucose ≥ 140 mg/dL, systolic BP ≥ 126 mmHg or diastolic BP ≥ 80 mmHg. Program effectiveness was determined by comparing the physiological measurements of high-risk students pre- and post-PHS intervention.

High-risk students were then assessed for MetS, defined as meeting ≥ 3 of the following criteria: BMI ≥ 97 th percentile, triglycerides (TRG) ≥ 95 th percentile, HDL-C ≤ 5 th percentile, systolic BP ≥ 126 mmHg or diastolic BP ≥ 80 mmHg, random glucose ≥ 140 mg/dL.

Results: Of the 3100 consented students, 1837 (59.3%) had complete measurement data. Upon analysis, 943 (51.3%) students were considered high-risk. Post-PHS, high-risk students showed improvement in TC (159 v.157, $p < 0.001$), LDL-C (90 v.87, $p < 0.001$), random glucose (96 v.93, $p < 0.001$), systolic BP (112.7 v.111.3, $p = 0.004$), and diastolic BP (65.7 v.63.7, $p < 0.001$). Among high-risk students, 219 (23.2%) met MetS criteria. When compared to students without MetS, students with MetS had significantly higher BMI (28.3 v. 22.4, $p < 0.001$), TRG (161 v. 96, $p < 0.001$), systolic BP (118.7 v. 110.7, $p < 0.001$), and diastolic BP (70 v. 64, $p < 0.001$).

Conclusions: A large population of middle school students in Michigan is at high-risk for CVD, a significant portion of whom are also positive for MetS. Importantly, participation in PHS resulted in significant improvement of CVD risk factors in high-risk students. Future investigations should assess the long-term effects of PHS in high-risk populations.

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C059

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IMPROVING ORAL CARE FOR CHILDREN WITH AUTISM

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Background: Oral health, an everyday occupation of daily living, is important to both physical and psychological health. Children with autism spectrum disorders (cASD) experience significant barriers to adequate oral care, including sensory processing concerns, impairments in communication, and ineffective techniques to alleviate fear and anxiety. However, little research on efficacious interventions to improve care for this population exists.

Statement of Purpose: To gather information from parents/caregivers and dental professionals on current strategies to facilitate successful oral care encounters for cASD.

Methods: Two focus groups with parents of cASD (9 parents with children aged 5–18 years) and two focus groups with 8 dental practitioners who treat cASD were conducted. Semi-structured questions were asked about the oral care related challenges experienced by cASD and the strategies employed to address them. Each session lasted 2.5–3 hours in duration and was transcribed verbatim. Thematic analysis following a grounded theory approach was used to analyze the data by 3 independent coders.

Results: Three themes emerged from the parent focus groups. The first theme, *What Makes a Good Dentist*, focused on the dentist's knowledge, understanding, and experience. The second theme, *Tricks, Tactics, and Diversions*, described different techniques to improve dental visits. The last theme, *Preparation, Preparation, Preparation*, explored parent-implemented strategies.

In the dentist focus groups, four themes emerged. The first theme, *Parents Know Best*, described how dentists often valued parental expertise regarding care techniques. The second theme, *Preparation*, explored strategies for preparation in the home and at the dental office. The third theme, *Network of Colleagues*, referred to dentists seeking advice of other health care professionals regarding working with the ASD population, as well as mentoring new dentists. The last theme, *Flexibility*, focused on dentists doing "whatever it takes" to accommodate the needs of cASD.

Conclusions: Focus group findings provide insight into the techniques perceived by parents and dental providers to lead to successful dental care encounters for cASD. Caring for a child with ASD is a unique and challenging experience. Better understanding of these strategies can help to improve oral care for cASD, and illuminate the particularities of how cASD engage in everyday occupations. This information has the potential to improve care for this population by identifying areas for modification to create the optimal experience for cASD and their parents.

Discussion about how to facilitate better experiences for cASD in dental settings also has potential to help mitigate the health disparities faced by this marginalized population.

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C060

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PARENT SUPPORT AND ADOLESCENT PERCEPTIONS OF COMMUNICATION FREQUENCY ABOUT WEIGHT-RELATED HEALTH BEHAVIORS

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Family Systems Theory emphasizes the role of positive parenting in promoting adolescent health, and open communication between parent and adolescent may facilitate self-regulation and behavior change. Research has shown that parents report higher frequency of these conversations than their children, yet few studies have examined factors that predict perceived frequency of these conversations in adolescents. The current study examined parenting factors associated with authoritative parenting, such as emotional and tangible support, autonomy support (providing choice), and parent frequency of health behavior communication that may be associated with adolescent perceptions of frequency of health behavior communication. Participants were African American adolescents ($N = 208$; $Age = 12.90$ years; 66% female; $MZBMI = 2.04$) and their caregivers ($Age = 43.60$ years; 94% female) enrolled in the Families Improving Together (FIT) for Weight Loss trial. Adolescent perceptions of communication frequency, parent-reported weight-related parenting behaviors, and parent-reported communication were measured using validated surveys. Adolescent zBMI was calculated from height and weight measurements and standardized using CDC growth reference curves. Regression analyses indicated that the model predicting adolescent perceived communication was significant beyond covariates (child and parent age and sex, child zBMI, and parent education; $F(11,196) = 3.52$, $p < 0.05$; $R^2 = 0.17$, $\Delta R^2 = 0.12$). Parent-reported emotional support for diet ($B = 0.28$, $SE = 0.10$, $p = 0.01$) and tangible support for PA ($B = 0.15$, $SE = 0.07$, $p = 0.03$) were positively associated with adolescent-perceived parent communication about health behaviors. Parent-reported emotional support for PA, tangible support for diet, autonomy support, and communication frequency were not significant predictors. Interestingly, adolescent- and parent-reported communication frequency were only moderately correlated within families ($r = 0.23$). Results suggest that weight-related parenting social support, especially encouragement for healthy eating and providing resources for activity, is an important predictor of youth recognition of parent conversations about health behavior change. Interventions should consider encouraging parenting skills associated with authoritative parenting style in addition to teaching parents positive communication strategies to use in health behavior change conversations in order to better support adolescents.

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C061

6:15 PM-7:15 PM

PEER NORMS PREDICT BENEFICIAL AND DETRIMENTAL INDICATORS OF DIET AND PHYSICAL ACTIVITY AMONG U.S. ADOLESCENTS

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Social norms exert notable influences on adolescents' behaviors, including those with the potential to bolster or degrade their health. Although peer influences on risky behaviors such as substance use have received greater empirical attention, prior research has documented evidence (albeit sometimes inconsistently) of social influence on adolescent dietary behaviors and physical activity. The present research extends previous work by examining associations between social norms for multiple behaviors – both beneficial and detrimental to health – in the domains of diet and physical activity and identifying moderators of those associations. Adolescent participants ($N = 1,496$; ages 12–17) from the Family Life, Activity, Sun, Health, and Eating study (FLASHE; 2014) separately reported on the extent to which their friends eat fruits and vegetables; eat junk food or drink sugary drinks; exercise; and watch TV, play on the computer, or play electronic games most days of the week. They also reported on their own attitudes and behaviors as well as their parents' corresponding attitudes and behaviors and sociodemographic characteristics. Separate adjusted regression analyses revealed that peer norms were associated with teens' own behavior for beneficial behaviors such as fruit and vegetable consumption ($\beta = 0.26$, $p < .001$) and physical activity ($\beta = 0.39$, $p < .001$) as well as detrimental behaviors such as junk food consumption ($\beta = 0.36$, $p < .001$) and sedentary habits ($\beta = 0.15$, $p < .001$). Subsequent analyses identified moderators of these associations, including attitudes about the focal behavior: liking fruits and vegetables ($b = 0.083$, $SE = 0.026$, $p = .001$) or physical activity ($b = 0.057$, $SE = 0.022$, $p = .01$) strengthened the corresponding positive associations between peer norms and teen behavior, but there were no moderation effects for detrimental behaviors. Parental norms (both descriptive and injunctive) were also associated with teen behaviors ($ps < .05$), though effects were smaller than for peer norms and not moderated by teen attitudes ($ps > .1$). Although the present results are limited by the cross-sectional nature of the data, they hold value for interventions such as social norms marketing campaigns that aim to change perceptions of peer norms for health-promoting behaviors, suggesting that optimal approaches may attempt to improve teens' attitudes about diet or physical activity in addition to their perceptions of their friends' behaviors.

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C062

6:15 PM-7:15 PM

PREDICTING WOMEN'S REPRODUCTIVE CARE ACCESS UNDER THE CURRENT POLITICAL ADMINISTRATION: THE ROLE OF ABORTION MISINFORMATION

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Women's reproductive healthcare has been a divisive topic during the first year of the current political administration. Identifying influences on perceptions of women's reproductive healthcare access is crucial to better understand reproductive policy support. Conservative and religious individuals are likely to oppose abortion (Pew Research Center, 2017) and have medically inaccurate ideas about contraception (Eisenberg et al., 2004). There are also gender differences, as women access reproductive services more frequently and better understand how access to reproductive care might change under the current administration. However, individual difference factors are not the sole predictors. Abortion misinformation (AM) likely predicts perceptions of reproductive healthcare access. Those with more AM support restrictive policies such as abortion bans (Kavanaugh et al., 2013) and thus may have different perceptions about reproductive healthcare access than those with less AM. This work sought to understand the predictive power of AM on access to reproductive healthcare.

The study included 308 individuals recruited on Amazon's Mechanical Turk, with four individuals excluded due to missing data. Participants completed online items regarding self-reported conservatism, gender, and religiosity. They also completed a researcher-designed AM measure and items assessing perceptions of reproductive healthcare access under the current political administration in four areas: contraception, abortion, preventive services for women with private insurance, and preventive services for women with Medicaid. Four hierarchical regressions, controlling for conservatism, gender, and religiosity, showed that individuals endorsing more AM believe women will have easy access to reproductive health care services under the current political administration. AM was significantly related to perceptions of contraception and abortion, such that those with more AM perceive women will have easy access to contraception, $\beta = .02, p < .001$, and easy access to abortion, $\beta = .01, p = .02$. Regarding preventive care, AM was significantly related to both preventive care for women with private insurance, $\beta = .02, p < .001$, and Medicaid, $\beta = .01, p = .05$. Those with more AM perceived women with both types of insurance would be easily able to access preventive care. These findings improve understanding of perceptions of reproductive healthcare access and could be beneficial in predicting support for proposed policies.

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C063

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SITTING POSTURAL CONTROL IS DIFFERENT IN INFANTS BASED ON MATERNAL PHYSICAL ACTIVITY FREQUENCY AND INTENSITY

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Background: A mother's health behavior has a direct influence on the health of her child. However, the influence a mother's physical activity (PA) can have on an infant's physical development is not well understood. There is a vital need to better understand how a mother's PA can influence their infants' motor development, particularly in regards to postural control.

Purpose: The purpose of this study was to determine whether maternal PA intensity and frequency influenced infants postural control strategies at one-month post onset of sitting.

Methods: 29 infant/mother dyads were recruited as part of a larger study assessing infant physical development. Infants center of pressure (COP) was measured on an AMTI force platform approximately one month after the onset of sitting occurred. Postural control was measured via linear measures which provide information on the amount of postural sway; the root mean square value (RMS) for the center of pressure in the anterior/posterior (AP) and medial/lateral (ML) direction. PA data were collected via interview with mothers and were categorized into activity intensity (sedentary, light, moderate/vigorous activity) and frequency (Results: An ANOVA revealed significant differences in regards to PA intensity for RMS in the AP direction ($p = .034$). Infants of mothers who reported moderate/vigorous intensity PA had the lowest RMS values (mean=8.4mm). While infants whose mothers were sedentary showed the highest RMS values in the AP direction (mean=20.1mm). In regards to PA frequency, similar significant differences were seen for RMS in the AP direction ($p = .008$). Infants of mothers engaging in PA ≥ 4 days per week had the lowest RMS movement in the AP direction (mean=8.2mm) and range (22.3mm-79.6mm) and those whose mothers reported $p = .31$).

Conclusion: Maternal PA intensity and frequency appears to lead to different postural control strategies in the AP direction. Further research is needed to determine what these differences mean for future milestone achievement (i.e., onset of standing, walking). Additionally, determining causation for these differences is crucial. Further evaluating women's prenatal PA in relation to infant's motor development outcomes is needed to gain a better understanding of infant milestone attainment.

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C064

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STRENGTHENING SELF-CONFIDENCE AND SOCIAL COMPETENCE: A MUSICAL CAMP FOR CHILDREN IN A YOUTH EDUCATIONAL CENTER IN GERMANY

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Background: During childhood, it is important to gain skills to build self-confidence. At the same time, peer groups play a relevant role for developing social competence. These constructs are valuable for growing into a healthy well-adjusted adult. A musical camp promoting these constructs was implemented at a Youth Educational Center in Germany.

Purpose: To evaluate a children's musical camp on self-confidence and social competence outcomes.

Methods: In this camp, participating children could choose between three different workshops: dance; theater; or choir; or a combination thereof. Mixed throughout the 6 day camp were social spare-time activities like a campfire, a night hike, and a team training course. Participants presented their musical performance on the last day. Post-test surveys using a scale from 1–4 (1: agree; 2: agree somewhat; 3: disagree somewhat; 4: disagree) were administered to all camp participants. Additionally, participants could indicate what they liked best and what should be improved.

Results: There were 22 participants (86% female; age $M=11.9$ [$SD=1.2$] years). The positively evaluated processes (% agree or somewhat agree) were: 86.4% endorsed that ambition is an essential part for presenting a musical ($M=1.3$, $SD=0.6$); 90.9% felt comfortable in the group ($M=1.3$; $SD=0.6$); and 81.9% felt that they could bring up their own ideas ($M=1.7$; $SD=0.8$). In terms of outcomes, 86.2% reported improved their self-confidence ($M=1.6$; $SD=0.8$) and 77.3% improved their social competence ($M=1.8$; $SD=0.8$) due to the camp. Thematic qualitative data analysis revealed that many of the children highlighted the workshops, the variety of workshops, the free time activities, as well as the solidarity of the group. Most of the participants agreed that they'd like to come back the next year and the most frequent improvement was keeping everything the same.

Conclusions: The results indicate that the camp had a positive effect on self-confidence and social competence of the children. This indicates that the program is suitable to strengthen self-confidence and social competence among the participants while they can discover and develop their own life skills. Further evaluation of the camp using a more rigorous research design is recommended. In addition, longitudinal follow-up of the participants should be done to investigate long-term impacts.

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C065

6:15 PM-7:15 PM

THE RELATIONSHIP BETWEEN BREASTFEEDING PRACTICES AND POSTPARTUM DEPRESSIVE SYMPTOMS IN APPALACHIAN WOMEN

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Introduction: Postpartum Depression and postpartum depressive symptoms have been found to have a strong association with breastfeeding duration in a significant portion of women across a variety of geographical locations. The aim of this study was to explore the correlation between postpartum depressive symptoms at 6 months postpartum and total duration of breastfeeding measured at 15 months postpartum in Appalachian women.

Methods: A longitudinal study was conducted in which 1,063 mostly low socioeconomic status women were recruited across 6 prenatal practices in Appalachia. At 6 weeks, 6 months, and 15 months postpartum, depressive symptoms were measured using the Edinburgh Postnatal Depression Scale (EPDS). From the original sample, 134 completed a self-report measure of breastfeeding initiation and duration at 15 months postpartum.

Results: EPDS score did not predict whether or not women breastfed, but did predict their duration of breastfeeding. Women who scored in the clinically significant range (13 or higher) on the EPDS at 6 months postpartum breastfed a significantly shorter length of time (Mean = 1.75 months, $SD = 2.70$) than women who scored below 13 on the EPDS (Mean = 4.48 months, $SD 5.22$; $t(133) = 3.61$, $p = .001$).

Conclusion: Clinically significant Edinburgh Postnatal Depression Scale scores were predictive of shorter duration of breastfeeding.

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C066

6:15 PM-7:15 PM

THE RELATIONSHIP OF CONSCIENTIOUSNESS TO ADOLESCENT HEALTH AND HEALTH-RELATED BEHAVIORS

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Background: Several meta-analyses have demonstrated the power of personality traits in predicting important life outcomes. Conscientiousness is consistently shown to be the most predictive of these traits, with conscientiousness predicting a range of outcomes, including health-related outcomes. While much research on conscientiousness and health-related behaviors has been conducted on adult populations, less has been conducted on adolescents.

Objective: To examine the relationship of conscientiousness and health-related behaviors, and subjective and objective measures of health in adolescents.

Methods: In April 2017, a national sample of 2,962 9th-12th grade students reported their height, weight, conscientiousness, and several health-related behavior questions taken from the 2017 Youth Risk Behavior Survey targeting physical activity, sedentary behavior, sleep and dietary intake. They also completed a 2-item subjective health measure ((2 items measuring how healthy students felt they were compared to their peers).

Results: Adolescent conscientiousness was significantly ($p<0.001$) associated with a host of health-related behaviors, including physical activity ($r = .14$), participation in sports teams ($r = .32$), weekday and weekend TV time ($r = -.10$ and $-.08$), time spent playing video games ($r = -.23$), weekday sleep time ($r = .12$), soda consumption ($r = -.09$), fruit and vegetable consumption ($r = .10$ and $.09$), and eating breakfast ($r = .17$). Conscientiousness was also related to subjective measures of health ($r = .18$). Interestingly, conscientiousness was not related to BMI ($r = -.04$).

Conclusions: Conscientiousness is associated with several important health-related behaviors. Although personality was previously thought to be “set in plaster” at an early age, emerging research suggests that personality is more malleable than previously thought. This suggests that interventions designed to improve conscientiousness may also lead to improved adolescent health.

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C067

6:15 PM-7:15 PM

A CHURCH-BASED WEIGHT LOSS INTERVENTION UTILIZING TEXT MESSAGES: THE LIFESTYLE CHANGES THROUGH EXERCISE AND NUTRITION (LEAN)

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Introduction: Church-based weight loss programs have been shown to result in significant weight loss and improved physiological parameters in African American adults. Few have taken advantage of recent mobile health (mHealth) technologies that may enhance outcomes. The current study is designed to assess the feasibility and efficacy of a church-based weight loss intervention that incorporated mHealth technology.

Methods: A 6-month cluster randomized trial design was utilized. Eight churches were randomized to the immediate intervention group (IIG; n = 5) or the delayed intervention group (DIG; n = 3). Community health coaches were volunteer congregation members who were trained to deliver the intervention to their respective churches. The intervention was based on the Diabetes Prevention Program (DPP). Participants in the IIG received 5 text messages per week related to the intervention content. Participants in the DIG received 2–3 text messages per week consisting of general health related topics specific to African American adults. Measures included body composition, physiological parameters, quality of life, and treatment satisfaction.

Results: The participants had a mean age of 56.0 (10.3), 91.8% were female, and the mean BMI was 38.6 (6.4). The average attendance was 55%. There were 97 African American adults enrolled across the IIG (n = 68) and DIG (n = 29). There was a significant between group difference in percent weight loss (p = 0.030) in that the IIG participants lost -1.4 ± 0.4 kg and DIG participants gained 0.17 ± 0.6 kg. There was a marginally significant difference in percent body fat (p = 0.067) in that the IIG participants lost $-0.4 \pm 0.8\%$ and DIG participants gained $1.4 \pm 0.5\%$. Greater than 80% of IIG participants reported that the text messages helped them to eat and exercise more and were satisfied with the number of text messages received. Approximately 43% of participants responded to the automated text messages.

Conclusions: This DPP translation study resulted in small but significant weight loss. The text messages were feasible to deliver to African Americans in a faith-based setting and was well-received. In the future, more advanced technology such as mobile apps, physical activity monitoring devices, bluetooth weight scales could be used to provide a more comprehensive intervention while also decreasing burden on the community health coaches and participants.

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C068

6:15 PM-7:15 PM

A PILOT RCT TESTING EFFECTS OF STEAM-ROOM USAGE AFTER EXERCISE ON CARDIOVASCULAR FUNCTIONING AMONG PRE-HYPERTENSIVE ADULTS

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Evidence of benefits from thermotherapy (e.g., traditional Finnish sauna, infrared sauna, thermal baths) exists but few studies have evaluated them systematically in randomized controlled trials (RCTs). The effects of exogenous heat treatments appear to parallel those associated with exercise and combining interventions may result in lowered coronary risk. The primary purpose of this pilot RCT was to test the potential additive effects of supervised heat therapy with exercise (vs. exercise alone) on vascular functioning in a sample of adults with untreated, confirmed pre-hypertension (120 to 139 mmHg systolic / 80 to 89 mmHg diastolic blood pressure [BP]). Participants received 14 weeks of supervised aerobic exercise (E dose=3x/week, 50 minutes, 50–75% max heart rate) followed by our experimental manipulation consisting of either quiet, seated rest in a lobby for 10–20 minutes (n=20) or time-matched sessions in a ~90° F steam-room (n=21). At baseline and 4-month follow-up, automated SBP and DBP were assessed along with demographics, history of cardiovascular disease (CVD) and smoking status, and a battery of physical, cognitive and psychosocial measures. Our sample consisted of mostly non-Hispanic White (73.2%) middle-aged adult (M=46.66) women (58.5%) who were married with 1 to 4 children (78%) and working full-time (87.8%). Every participant received a paid gym membership for 4 months and they were further encouraged to meet public health physical activity guidelines plus AHA guidelines for reducing blood pressure. Overall compliance with sessions was 80% and the difference in attendance between steam and rest conditions was not statistically significant (30.62 sessions [SD=14.40] and 4 dropouts vs. 36.60 [SD=6.05] and 2 dropouts, respectively, p=.09). Two adverse events were reported (1 from each group) and both were attributed to existing chronic health conditions. In line with intention-to-treat, we analyzed data using plausible values generated by well-established multiple imputation procedures for missing follow-up (n=7) data. In support of our primary hypothesis, a significant group effect was found in a 2 (E+Steam, E+Rest) x 2 (SBP, DBP) MANOVA adjusting for baseline SBP and DBP and multiple comparisons (Wilks λ = .865, F=2.81, η^2 = .14). Univariate analyses revealed SBP reduction in favor of E+Steam (7.84 vs. 1.95 mmHg, η^2 = .11), even after adjusting for dose (total sessions attended) and known covariates including family history of CVD, smoking status, and living alone (p < .05, η^2 = .10). DBP change was not statistically different between groups, although improvement was observed across the intervention (3.37 mmHg vs. 2.13 mmHg). The findings support our prior studies and together they offer evidence of a promising non-pharmacological treatment for reducing BP among pre-hypertensive middle-aged adults.

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C069

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AN EXPLORATION OF WHETHER RELIGIOUSNESS PREDICTS EATING BEHAVIORS, WEIGHT CONCERNS, OR WEIGHT GAIN IN PREGNANCY

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Measures of religiousness, diet, weight gain, and eating disordered thinking were assessed in a sample of 182 (age 15 to 42 years) mostly low-income pregnant women in Southeastern Appalachia. Data were taken from a larger, longitudinal pregnancy smoking cessation study conducted from 2007 to 2013. Women completed the Brief Multidimensional Measure of Religiousness/Spirituality (BMMRS), The EAT-26, and the Adult Eating Patterns Scale during a prenatal interview for which they received \$20. Pre-pregnancy BMI and total pregnancy weight change were taken from prenatal charts. Final pregnancy weight change ranged from losing 20 pounds to gaining 92 pounds. Weight change was significantly predicted by pre-pregnancy BMI, with heavier women gaining less weight as would be recommended by healthcare providers. Religiousness was not predictive of pre-pregnancy BMI or weight change, which conflicts with some previous reports that religiousness predicts higher weight; however, pregnancy is a unique time with regard to weight and weight change. Religiousness was also unrelated to self-reported eating behaviors reported on the Adult Eating Patterns Scale, which measures intake of fats, sugars, vegetables, and lean meats. Religiousness was related to EAT_26 scores, with women scoring as more religious on the BMMRS having higher EAT_26 scores, indicating more weight concerns. Pre-pregnancy BMI was also positively related to EAT_26 scores, indicating heavier women were more concerned about their weight. Entering both pre-pregnancy BMI and BMMRS total score in a multiple regression model with EAT_26 scores as dependent variable, pre-pregnancy BMI ($b = .15, p = .04$) and BMMRS ($b = .16, p = .03$) significantly predicted weight concerns ($DR^2 = .024, F(180,2) = 3.96, p = .02$), although accounted for a very small proportion of the total variance in EAT_26 scores. Nine of the women scored above 20 points on the EAT_26, which is considered to be the cutoff for possible eating disordered thinking. Women above and below the cutoff point did not have significantly different mean BMMRS total scores ($t(181) = 0.53, p = .60$). In summary, religiousness does not seem to be a strong predictor of eating patterns or eating disordered thinking in pregnant women in this small sample in this population.

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C070

6:15 PM-7:15 PM

COMPLEMENTARY EFFECTS OF EXERCISE AND HEAT THERAPY ON MINDFULNESS AND COGNITION

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Heat therapy is used in many cultures, yet little is known about its potential immediate and long-term cognitive benefits, especially when combined with exercise. However, effects of aerobic exercise on cognition are well-established. We hypothesized that the combination of exercise and adjuvant heat therapy would improve mindfulness and cognitive functioning. Participants received 14 weeks of supervised, regular (3x/week) moderate intensity aerobic activity (50–75% max HR, 50 mins) followed by experimental manipulation consisting of 10–20 min sessions in a ~90° F steam-room (steam group; n=21) or time-matched quiet, seated rest in a lobby (n=20). A battery of assessments including demographics, verbal vocabulary, *Mindfulness Attention Awareness Scale* (MAAS), Flanker (% cost in reaction time) and Digit Symbol Substitution Test (DSST; # correct responses) were measured at baseline and post-intervention (Month 4). Focus of attention (FoA; external=0, internal=10), Ratings of Perceived Exertion (RPE; 1=no exertion, 11=max exertion), and perceived mental fatigue (PMF; 1=low, 5=high) were measured within each session (post exercise and post manipulation, at every session). To test the immediate effect of heat, we averaged data across the first 3 sessions. The sample consisted of middle-aged adults (Female=59%, $M_{age} = 47$) who were pre-hypertensive and screened for depression and cognitive impairment. Overall compliance with sessions was 80%. To comply with intent-to-treat analysis (dropout=6), missing data were imputed via multiple imputation procedures. Results of a 2 (Steam vs. Rest) x 4 (MAAS, FoA, RPE, PMF) MANOVA, revealed a significant effect for group (Wilks $\lambda = .458, F_{(4)} = 9.46, p < .01, \eta^2 = .54$). There were no group differences in MAAS change over the 14-week intervention. However, univariate analyses revealed Steam had more internal FoA ($M_s = 6.22$ vs $3.51, \eta^2 = .37$), higher RPE ($M_s = 4.71$ vs $1.63, \eta^2 = .42$) and lower PMF ($M_s = 1.99$ vs $2.04, \eta^2 = .12$). In a separate 2 (Steam vs. Rest) x 2 (Flanker, DSST) MANOVA, a significant group effect was also found. Follow-up analyses showed that participants in the Steam condition performed significantly better on Flanker (9.45 vs $13.44, \eta^2 = .13$), even after adjusting for age, education, verbal vocabulary, and baseline Fitbit steps. A non-significant trend in processing speed favored steam (DSST=91 vs. 87, $p = .11, \eta^2 = .07$). Interestingly, upon adding dose (# of sessions attended), group differences in inhibition were attenuated ($p = .32, \eta^2 = .03$) whereas differences in processing speed were strengthened ($p = .04, \eta^2 = .12$). In conclusion, exercise and steam-room usage results in more favorable immediate change in psychological profile and longer-term change in cognitive functioning. Together, adjuvant heat therapy appears to complement the effects of aerobic exercise in pre-hypertensive adults.

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C071

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INDIVIDUAL DIFFERENCES IN RELIGIOSITY INFLUENCE THE ACCEPTABILITY OF AND RESPONSE TO MINDFULNESS-BASED INTERVENTIONS

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Mindfulness-based interventions (MBIs) are in increasingly widespread use, and research on MBIs is burgeoning. However, religiosity may present an implementation challenge for interventionists, in the uncertainty about the role of spirituality in intervention design, and for participants, due to perceived conflicts between participants' spiritual commitments and the religious valence of interventions. We conducted two studies, one cross-sectional (Study 1: $n = 450$) and one experiment (Study 2: $n = 715$), to examine the extent to which religiosity influences preference for and response to mindfulness-based interventions. In Study 1, indices of conservative religiosity (Religious Schemas Scale: RSS) correlated positively with willingness to try *spiritually* valenced mindfulness ($r=0.45$) and mindfulness from one's own tradition ($r=0.49$), and negatively with *secularly* valenced ($r=-0.31$) and *Buddhist* ($r=-0.17$) mindfulness. Indices of religious flexibility (Existential Quest: EQ), on the other hand, correlated positively with willingness to try most kinds of mindfulness, including Buddhist and Secular mindfulness, exhibiting a different pattern from RSS. Study 2 examined the impact of religiosity on the experience of a brief online mindfulness intervention. This experiment presented participants with one of three religiously valenced (Secular, Spiritual, and Buddhist) guided mindfulness practices, and examined the relationships between participant religiosity (RSS; EQ), condition, and outcome variables that capture (a) acceptability and (b) pre-post affective change. This experiment featured a predominantly secular sample, and found a significant interaction of Quest and condition on acceptability of the mindfulness practice, but no significant interaction effects on pre-post affective change. However, EQ significantly predicted increased pre-post self-reported happiness ($r = 0.10$) and relaxation ($r = 0.13$), decreased stress ($r = -0.17$) and depression ($r = -0.17$), and was positively associated with acceptability ($r = 0.18$). These initial studies suggest that individual differences in religiosity impact the acceptability of MBIs, and may also influence participants' response to these interventions. We offer a series of recommendations for addressing the potential challenges to implementation and dissemination posed by religiosity, and additionally provide direction for future research.

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C072

6:15 PM-7:15 PM

MIND-BODY-SPIRITUAL MANTRAM VERSUS TRAUMA COPING SKILLS FOR PTSD IN VETERANS: A NATURALISTIC STUDY

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Objectives: Prior randomized trials on outcomes of the Mantram Repetition Program (MRP) in Veterans with posttraumatic stress disorder (PTSD) have shown significant posttreatment reductions in PTSD symptom severity. A mantra(m) is a sacred word or phrase repeated silently throughout the day for mindfulness and self-regulation. This study compared the MRP versus Trauma Coping Skills (TCS) in a natural setting where Veterans with PTSD self-selected their treatments.

Methods: Using a non-randomized, naturalistic design, 66 Veterans with PTSD self-selected either 8-weeks (1 hour/week) of group MRP ($n=35$) or group TCS ($n=31$). Both interventions included education about PTSD but differed in the type of skills to manage symptoms. Clinician-Administered-PTSD Scale-version-4 (CAPS), PTSD Checklist-version 4 (PCL) and Mindfulness Attention Awareness Scale (MAAS) were administered at pre- and posttreatment. Data were analyzed using repeated measures ANOVA.

Results: There were no significant differences between groups on demographic or clinical measures at baseline. Participants' average age was $57 + 11.33$ ranging from 23 to 73 years old. Sixty-eight percent ($n=40$) were White, 92% ($n=61$) male, and 82% ($n=54$) unemployed. There were significant group by time interaction effects for CAPS, $F(1,59)=7.37, p=.01$, and PCL, $F(1,61)=6.81, p=.01$, indicating the MRP group had significantly greater decreases in PTSD symptoms at post-treatment. There was also a significant improvement in mindfulness in the MRP group, $F(2,60)=7.55, p=.01$ at posttreatment than the TCS group.

Conclusions: The MRP, a complementary and spiritual based program for PTSD coping, demonstrated significant improvements in PTSD symptom severity and mindfulness compared to the TCS group in a naturalistic, real-world setting. This study provides additional support for the therapeutic effects of the MRP among Veterans with PTSD.

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C073

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MINDFULNESS-BASED SMOKING CESSATION AMONG PREDOMINANTLY LOW-INCOME, AFRICAN AMERICAN SMOKERS

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Recent studies support the efficacy of mindfulness-based smoking cessation interventions. However, more research is needed to examine the acceptability, feasibility, and effectiveness of these programs, as well as any necessary cultural adaptations, among underserved populations (e.g., low-income African American smokers, who experience profound tobacco-related disparities). This mixed-methods feasibility study examined experiences with mindfulness-based smoking cessation treatment among 53 African American smokers (49% female), most of whom (69%) reported total annual family income < \$24,000. Participants were enrolled in Mindfulness-Based Addiction Treatment (MBAT), which consisted of eight weekly 2-hour group sessions. MBAT taught both formal (e.g., sitting meditation, body scan, yoga) and informal (e.g., awareness of breath) mindfulness practices, in addition to specific strategies for quitting smoking. Participants completed program evaluations to indicate whether they would recommend MBAT to others (1=would not recommend, 10=would definitely recommend); their confidence for continuing to practice mindfulness (1=not at all confident, 10=extremely confident); what they liked and did not like about MBAT; and recommendations for improvement. Of the 37 who have now completed the final evaluation (data collection to be complete in the next month), the mean rating of the extent to which participants would recommend the program was 9.3 ($SD=1.5$). Mean confidence ratings for continued formal and informal mindfulness practice were 7.6 ($SD=2.9$) and 7.5 ($SD=3.0$), respectively. Participants noted that the social support of the group, the meditation practice, learning to focus on the present, and learning to recognize triggers without automatically reacting were helpful. When asked what they disliked and suggestions for improvement, most participants responded “N/A” or “nothing.” Of those who provided feedback, some indicated logistical difficulties with the timing of group sessions. Participants commonly noted plans to practice formal sitting meditation and body scan in addition to more informal mindfulness of breathing, walking, stretching, and eating. Some also noted plans to practice mindfulness in the context of prayer. Example quotations from qualitative data will be presented and discussed. Overall, results provide support for acceptability and provide suggestions for offering mindfulness-based smoking cessation among low-income African American smokers.

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C074

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PRELIM OUTCOME AND PROCESS RESULTS OF A RANDOMIZED WEIGHT LOSS MAINTENANCE TRIAL IN RURAL AFRICAN AMERICANS OF FAITH: THE WORD

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Despite multidisciplinary efforts to control the nation's obesity epidemic, obesity has persisted as one of the U.S.'s top public health problems, particularly among African Americans. Innovative approaches to address obesity that are sensitive to the unique issues of African Americans and easily translatable to “real-world” settings are critical. RE-AIM is a useful framework for assessing key aspects of an intervention for translation into real-world practice. However, few obesity trials for African Americans measuring RE-AIM aspects have been conducted. Thus preliminary effectiveness, reach, and adoption of a lay-led weight loss maintenance intervention for rural adults of faith were assessed.

The WORD is a lay-led cluster randomized trial (425 participants in 30 churches) designed to reduce and maintain weight loss in African-American adults of faith in the Arkansas Delta region. All participants received the Diabetes Prevention Program (DPP) adapted core weight loss program from baseline to 6 months, and then were randomized to a maintenance treatment or control. The intervention's preliminary effectiveness in weight loss, reach, and adoption was assessed at baseline and 6 months.

Participants' mean weight loss was 2.3% ($SE=0.4$) from baseline to 6-month follow-up; participants who attended at least half of the intervention sessions lost 3.6% ($SE=0.6$). Most recruited churches were Baptist, 2/3 had 150 or fewer active members, and about 1/3 had operating budgets of \$15,000-\$50,000. Most lay leaders were female (89.3%), in married/committed relationships (65.5%), and employed (64.2%), with household incomes of

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PROCESS EVALUATION OF A FAITH-BASED INTERVENTION TO INCREASE PHYSICAL ACTIVITY AMONG CHURCHGOING LATINAS IN SAN DIEGO.

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Background: Faith in Action was a faith-based randomized controlled trial to promote physical activity (PA) among churchgoing Latinas. *Promotoras* (community health workers) invited churchgoers to and led PA classes in Catholic churches (6 classes per week, 60-minutes each), conducted motivational interviewing calls, and mailed monthly health promotion handouts to intervention participants. Intervention versus attention-control participants increased moderate-to-vigorous physical activity (MVPA), reduced body mass index (BMI) and used more behavioral strategies for engaging in PA at post-intervention. This study examined factors associated with intervention implementation, including reach, dose delivered, and participant satisfaction.

Methods: A sample of adult Latinas ages 18–65 years old ($n=217$) were recruited from churches to serve on an evaluation cohort. Process evaluation surveys were administered at the 12-month follow-up to assess the impact of announcements made in church, participants' perceptions of and motivation to attend PA classes, participants' perceptions of the *promotoras*, and the motivational interviewing calls on increasing behavioral strategies for PA. Class attendance logs, motivational interviewing guides, and mailing logs were collected for the duration of the intervention. Associations between process measures and outcomes were assessed with linear regression models.

Results: At the 12-month follow-up, participants were more likely to report using behavioral strategies for engaging in PA if they attended more walking groups ($\beta=.31$, p

Conclusion: Findings suggest that individual factors (improving health) and intervention factors (PA classes and motivational interviewing calls) helped promote behavioral strategies to engage in PA. The PA classes provided opportunities to learn behavioral strategies for PA from the *promotoras* and other participants. The motivational interviewing calls were opportunities to discuss possible strategies to overcome barriers to PA and to motivate participants to be active. The results suggest that offering PA classes and motivational interviewing may increase behavioral strategies for PA. These findings help researchers better understand the mechanisms of change and inform dissemination and implementation research involving community-based samples in the promotion of PA.

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C076

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PROJECT UPLIFT: A DISTANCE DELIVERED MINDFULNESS-BASED INTERVENTION TO ADDRESS DEPRESSION AMONG DIVERSE POPULATIONS

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Project UPLIFT is a mental health skills program that was originally designed to address depression among people with co-morbid chronic disease such as epilepsy who could not get out to attend psychotherapy. People with epilepsy suffer neurological impairment, and also encounter medical, economic, and social hardships as a result of their disability. In addition, depression is a common co-morbid psychiatric disorder among people with epilepsy that often goes unrecognized and under-treated among these individuals. The UPLIFT program's eight sessions are largely based upon mindfulness-based cognitive therapy and designed to be distance-delivered to groups of 7 participants. In two randomized clinical trials among people with epilepsy, Project UPLIFT has been demonstrated to be effective in preventing the onset of Major Depressive Disorder, significantly reducing symptoms of depression, and improving satisfaction with life. Project UPLIFT has also been used, and adapted when necessary, with caregivers of people with epilepsy, African Americans with epilepsy, Hispanics with epilepsy, adults with cystic fibrosis, youth with cystic fibrosis, rural pregnant women, and women with cardiovascular disease. The presentation will share results from the clinical trials among people with epilepsy, and from studies conducted to assess the cultural appropriateness of the intervention for minority populations.

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C077

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THE FAITH, ACTIVITY, AND NUTRITION (FAN) DISSEMINATION AND IMPLEMENTATION (D&I) STUDY: RESULTS OF COUNTYWIDE IMPLEMENTATION

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Background: Churches in the U.S. south have great potential to reach under-resourced communities for health promotion efforts. We conducted phase 1 of the FAN D&I study in a rural and medically underserved county in South Carolina. This presentation reports intervention implementation.

Methods: Churches (n=59) were randomized to a 12-mo intervention or to a control (delayed intervention) condition. The intervention, delivered by trained community health advisors, was a one-day training (resources provided) followed by brief, monthly technical assistance calls. It focused on helping churches create opportunities, set guidelines/policies, share messages, and enlist pastor support for physical activity (PA) and healthy eating (HE). We conducted telephone interviews assessing these four domains of HE and PA church practices with church coordinators at baseline (before randomization) and 12 mos later. Church coordinators, selected by pastors, agreed to serve as the study contact and coordinate implementation efforts. We tested differences between intervention and control churches over time with repeated measures regression models, controlling for church size. We also calculated effect sizes (Cohen's d) for each variable.

Results: Coordinators from 54 churches (35 intervention, 19 control) completed interviews at both times (94% African American, 96% women, 60 ± 9 years of age; 37% college graduates; 54% obese). Intervention church coordinators reported significantly greater increases in implementation of PA opportunities; HE and PA guidelines; HE and PA messages; and pastor support for HE and PA than control coordinators (p

Conclusion: We observed high rates of implementation in intervention churches. Results paralleled the pattern of implementation reported in anonymous questionnaires of church members (results reported elsewhere) and shown in our previous effectiveness trial, demonstrating replication and consistency. The potential for even broader dissemination is great, particularly because community health advisors rather than research staff trained and supported churches.

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C078

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TRANSLATING POSITIVE ACTIVITIES INTERVENTIONS FOR USE WITH MILITARY VETERANS WITH KNEE OSTEOARTHRITIS

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Knee osteoarthritis is a painful, disabling condition that disproportionately affects African Americans. Existing arthritis treatments yield small to moderate improvements in pain and have not been effective at reducing racial disparities in the management of pain. The biopsychosocial model of pain and evidence from the positive psychology literature suggest that increasing positive psychological skills (e.g., gratitude, kindness) could improve pain and functioning and reduce disparities in osteoarthritis pain management. Activities to cultivate positive psychological skills have been developed and validated; however, they have not been tested in patients with osteoarthritis and their effects on racial differences in health outcomes have not been examined. This presentation will describe the process of developing the Staying Positive with Arthritis (SPA) program, a positive psychological intervention tailored based on input from the target demographic: African American and White patients being treated for painful knee arthritis in the Veterans Affairs Healthcare System. The presenter will discuss how activities were chosen for consideration, modified based on patient input, and packaged for delivery using a combination of printed workbooks and brief telephone calls with trained interventionists. Rationale for decisions about the final program's length, content, and format will be discussed, as will potential modifications to enhance future widespread implementation of the program. Finally, the presenter will share how the effects of the program on pain, functioning, and an array of psychosocial factors are being tested in an ongoing randomized controlled trial.

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C079

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ACCEPTABILITY OF CAM INTERVENTIONS FOR ADHD AMONG COLLEGE STUDENTS: IMPLICATIONS FOR TAI CHI

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Objective: Developing effective non-pharmacological therapies for ADHD is important. We gauged the likelihood that undergraduates would participate in a trial of Tai Chi, a form of moving meditation, as an intervention for ADHD. We also evaluated their attitudes towards complementary and alternative medicine (CAM).

Methods: Survey responses were collected from 47 undergraduates with ADHD and 49 controls. Survey items measured the likelihood of participating in trials of Tai Chi and other non-pharmacological therapies, symptom severity, attitudes toward CAM, and general health.

Results: Undergraduates with ADHD showed greater acceptance of CAM therapies than students without ADHD. Thirty-Two percent of students with ADHD expressed a strong willingness to participate in a Tai Chi trial, with the greatest interest among women with ADHD.

Conclusion: These results support the feasibility of performing a trial of Tai Chi as therapy for undergraduates with ADHD, and suggest this population is receptive toward CAM in general.

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C080

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REDUCING STUDENTS' STRESS THROUGH A BRIEF MINDFULNESS PRACTICE

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Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1979) has been shown to effectively reduce stress across a variety of populations (e.g., Canby, Cameron, Calhoun & Buchanon, 2015). However, research on the amount of mindfulness practice time necessary to achieve such benefits has been equivocal (e.g., Hindman, Glass, Arnkoff & Maron, 2014). The present study examined the effects on stress of a brief mindfulness practice intervention based on MBSR. Forty-eight undergraduate college students at a moderately sized public liberal arts university in the Midwestern United States participated in the study. The participants were predominantly female (77%) and ranged in age from 18–50 (M = 21.67 years, SD = 5.48). Students were instructed to complete online measures of mindfulness, stress, mood and personality variables both before and after a three-week period. The students then attended a one-hour informational session about mindfulness, as well as instructions for practicing mindfulness both formally and informally. Participants were given instructions for ways to formally practice mindfulness including mindful walking and mindful eating (i.e. the Raisin exercise). In addition, participants were explained how mindfulness practice could be incorporated more informally during everyday activities, such as while brushing their teeth or in between classes. The participants were then instructed to practice formal and / or informal mindfulness at least once per day over the three-week period. The participants then completed the post-test measures. The study received Institutional Review Board approval prior to beginning. Students received extra credit in their undergraduate psychology course for participating in the study.

The results of the study showed that participants who practiced mindfulness during the three weeks significantly reduced their levels of stress, $F(1,94) = 9.17$, $p = .002$. In addition, the students practiced on average 17.5 minutes per day. These findings demonstrate the value of this brief mindfulness practice with a population who reports experiencing significant stress (e.g., Hindman et al., 2014). Furthermore, the activities in this study did not require a substantial period of time to practice. In addition, it can be argued that this practice of mindfulness while engaged in everyday activities such as those in this study may actually require little or no additional time for practice each day. Further research is needed to replicate these findings across different samples; however, these results represent a promising approach to helping undergraduates with stress management.

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C081

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RELATIONSHIP BETWEEN RESILIENCE AND TRAIT MINDFULNESS IN OLDER ADULTS WITH HYPERTENSION

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Resilience, the capacity to bounce back from the diverse challenges that can occur in life (Campbell-Sills & Stein, 2007), is linked with increased well-being among older adults. However, psychological traits that may enhance resilience, and in turn may reduce anxiety are not well understood in this population.

Methods: Baseline data were examined from older adults with hypertension ($n = 62$; 64.5% female, mean age = 73.5 years, $SD = 8.54$) participating in a behavioral intervention study for hypertension. Psychological factors assessed included: resilience measured with the Connor-Davidson Resilience Scale (CDRS), anxiety symptoms measured with the 8-item PROMIS Anxiety questionnaire, mindfulness measured with Mindfulness Attention Awareness Scale (MAAS), and awareness of bodily signals, aka interoceptive awareness (particular aspects of mindfulness) as measured with the Multidimensional Assessment of Interoceptive Awareness (MAIA). Independent linear regression analyses, adjusting for age and sex were performed to determine if increased mindfulness and aspects of interoceptive awareness were related to heightened resilience, and whether enhanced resilience was associated with reduced symptoms of anxiety.

Results: CDRS was positively associated with MAAS ($\text{delta}R^2 = .288$, $p < .001$), and subscales of MAIA, including attention regulation ($\text{delta}R^2 = .171$, $p = .002$), not-worrying ($\text{delta}R^2 = .163$, $p = .002$), and self-regulation ($\text{delta}R^2 = .402$, $p < .001$). Conversely, CDRS was negatively associated with PROMIS Anxiety scores ($\text{delta}R^2 = .123$, $p = 015$). In conclusion: greater levels of trait mindfulness, and aspects of interoceptive awareness were associated with increased resilience. In turn, greater resilience was related to lower anxiety levels in older adults with hypertension. Thus, interventions that enhance mindfulness may improve resilience in older adults and potentially have the additional benefit of reducing anxiety symptoms, thus improving quality of life and well-being.

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C082

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A REVIEW OF LATINO/LATINX PARTICIPANTS IN MINDFULNESS-BASED INTERVENTION RESEARCH

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Mindfulness-based interventions (MBIs) have proven efficacy in reducing stress and improving a variety of health outcomes. Recent studies consider the usefulness of MBIs for youth and adults from historically-underserved and -marginalized populations (Jee et al., 2015; Sobczack & West, 2013; Woods-Giscombe & Gaylord, 2013; Woods-Giscombe & Gaylord, 2014; Watson et al., 2016); however, the use of MBIs for Latinx populations is not well understood. This review examined the feasibility and efficacy of MBIs in peer-reviewed studies wherein the largest proportion of participants identified as either Latino or Hispanic. To practice inclusivity beyond male/female binaries, we use the term “Latinx” here. A systematic literature search across 4 databases yielded 17 articles eligible for inclusion. Generally, the existing research suggests that MBIs are feasible and acceptable in Latinx populations, and yield positive changes in a variety of psychosocial and health-related outcomes, including mental health symptomatology (e.g., depression), health behaviors (e.g., HIV transmission-related behaviors), and physical health indicators (e.g., BMI). Effect sizes ranged from small to large with stronger effects typically seen for mental-health related outcomes. Limitations of the existing research include small sample sizes, a lack of rigor in intervention design, and limited description of how interventions might be culturally or socially adapted. From an interdisciplinary perspective we describe recommendations for future research, including suggestions for culturally relevant adaptations to MBIs (e.g., congruent emotion regulation techniques, analogies, and/or visualizations) and anti-oppression practices for practitioners (e.g., understanding race-based trauma and deep listening).

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CHILDHOOD EXPERIENCES AND BODY/MIND/SPIRIT HEALTH IN ADULTS

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Background: Negative childhood experiences, such as loss of parents, abuse, and dysfunctional family relationships, affect health in adults. Less is known about how adaptive strategies could improve life satisfaction. The purpose of this study was to examine the predictability of adverse childhood experiences, chronic sorrow, religious/spiritual (R/S) practices and hope on life satisfaction in adults.

Methods: This cross-sectional study was a convenience sample of 132 adults (mean age = 33.8 ± 15.2, 82% female) recruited primarily during a health fair in the Southeastern United States. The Adverse Childhood Experiences scale and Kendall Chronic Sorrow Instrument measured negative childhood experiences. Eight subscales of the Brief Multidimensional Measure of Religiousness/Spirituality (BMMRS) assessed R/S practices (Daily Spiritual Experiences, Values, Forgiveness, Private Religious Practices, R/S Coping, Religious Support, Organizational Religiousness, Overall R/S.) The Herth Hope Index and Satisfaction with Life scale were also used. Two hierarchical multiple regressions were used to predict effects of adverse childhood experiences and chronic sorrow on life satisfaction, then to examine the additional predictive influence of R/S and hope while controlling for previous effects.

Results: Adverse childhood experiences predicted poor life satisfaction ($\beta = -.278$, $p = .016$), remaining significant through all regression steps. Forgiveness was the only significant R/S practice, predicting better life satisfaction ($\beta = .340$, $p = .037$). The addition of hope strongly predicted higher life satisfaction ($\beta = .596$, $p < .001$), with forgiveness becoming nonsignificant. Religion as coping emerged as a significant predictor of poor life satisfaction at this step ($\beta = -.331$, $p = .036$) apparently related to use of negative religious coping. In the second regression, chronic sorrow predicted poor life satisfaction ($\beta = -.240$, $p = .030$), becoming nonsignificant with the addition of R/S variables (forgiveness again emerging as a positive predictor, $\beta = .389$, $p = .02$). Adding hope to the model again produced a strong positive effect on life satisfaction ($\beta = .560$, $p < .001$), reducing the effect of forgiveness to nonsignificance.

Conclusion: Negative childhood experiences predict poor life satisfaction during adulthood. Interventions to promote hope and forgiveness and reduce negative religious coping hold promise to improve life satisfaction in adults who experienced adverse experiences or loss during childhood.

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C084

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COGNITIVE FUSION PREDICTS PHYSICAL FUNCTIONING IN COLLEGE STUDENTS

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Cognitive fusion refers to the failure to distinguish ourselves and our experiences from our thoughts. It's the tendency to act on our thoughts as if they were "reality" instead of seeing them as merely cognitive events. Fusion with thoughts can result in behavior that is overly dominated by cognition and less influenced by direct experience in one's environment. Cognitive fusion and its counterpart, cognitive defusion, are important processes in the psychological flexibility model that underlies Acceptance and Commitment Therapy (ACT). Higher levels of cognitive fusion have been associated with greater levels of distress and perceptions of physical pain in both older and younger adults. It is likely that the inability to defuse from one's thoughts can have a variety of physical and emotional consequences for college students but little is known about this relationship. Therefore, the purpose of this study was to explore how cognitive fusion predicted physical functioning in college students while controlling for other related variables. Participants were 353 college students from a small liberal arts college in upstate New York. After informed consent was obtained, participants completed the following questionnaires: SF-36, Cognitive Fusion Questionnaire, Perceived Stress Scale (PSS-14), Luben Social Network Scale-Revised (LSNS), and Five Facets of Mindfulness Questionnaire (FFMQ). Participants also answered questions about sleep duration and quality on weekdays and weekends. Using Hierarchical linear regression analyses, we found that after controlling for sleep, social support, mindfulness, and stress, cognitive fusion ($\beta = -.18$, $t = -2.34$, $p = 0.02$) was the only significant predictor of physical functioning in college students. The model was able to account for 8% of the variance in physical functioning, $F(1,253) = 5.47$, $p < .001$, $R^2 = .08$. Although a small amount of variance was accounted for by cognitive fusion, it was the only variable significant for health in this sample of college students. As it is the first study to provide evidence for cognitive fusion in health, more work is needed to understand how thoughts play a role in physical health among young adults.

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C085

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DIFFERENCES BETWEEN MINDFULNESS MEDITATION AND MINDFUL YOGA AS MEASURED BY THE FIVE FACET MINDFULNESS QUESTIONNAIRE

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Objective: To measure differences between experienced seated mindfulness meditation practitioners (meditators), experienced mindful yoga practitioners (yogis), and practitioners who practice both meditation and yoga (mixed group) as measured by the Five Facet Mindfulness Questionnaire (FFMQ).

Methods: Participants (N=398) were recruited through social media and classified into 3 groups: meditators (n=52), yogis (n=68), or mixed group (n=33). Data from participants who failed to meet these qualifications (n=245) were not analyzed. Total mindfulness scores and scores in the 5 sub components of the FFMQ (observing, describing, acting with awareness, non-judging, and non-reacting) were compared between groups using a two-way ANOVA and Tukey's HSD tests.

Results: Participants were mostly female (78.60%; n=313), white (76.50%; n=304), and college educated (76.00%; n=302), consistent with mindfulness practitioners as reported by the 2012 National Health Interview Survey. The mean age was 40.49 (SD=1.08) years. On average, meditators reported practicing meditation 144.34 (SD=15.19) minutes per week (m/wk), yogis, 341.83 (SD=21.20) m/wk, and mixed group 546.97 (50.54) m/wk. A two-way ANOVA yielded a significant difference in total mindfulness, $F(2, 193) = 6.91, p < 0.001$, observing, $F(2, 193) = 4.16, p < 0.02$, describing, $F(2, 193) = 4.38, p < 0.01$, acting with awareness, $F(2, 193) = 4.14, p < 0.02$, and non-reacting, $F(2, 193) = 5.66, p < 0.01$. Tukey's HSD revealed the mixed group showed significantly greater scores than meditators in total mindfulness ($p < 0.001$), observing ($p < 0.03$), describing ($p < 0.01$), acting with awareness ($p < 0.02$), and non-reacting ($p < 0.01$). No significant differences between meditators and yogis, and between mixed group and yogis were found.

Conclusions: Findings from this pilot study support no difference between meditators and yogis, but differences between mixed group and meditators suggest that increased time spent practicing mindfulness will result in greater mindfulness outcomes. Limitations of this study include participants with different practice types and minutes per week within groups. Future research may include experimental design to measure differences between seated meditation and yoga, controlling for frequency, duration, and type of practice. Work in this line of research can be used to develop mindfulness interventions that are both effective and sustainable in peoples' daily lives.

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C086

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EFFECTS OF DANCE MOVEMENT INTERVENTION ON ELDERLY WITH EARLY DEMENTIA: PRELIMINARY RESULTS OF A RANDOMIZED CONTROLLED TRIAL

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Background: Dementia describes a clinical syndrome that encompasses difficulties in memory, language, and impairments in daily activities, often accompanied by anxiety and depression symptoms. The primary objective of non-pharmacological interventions is to minimize psychosocial disturbances and slow disease progression. This study aims to examine the effects of dance movement intervention which combines psychotherapeutic elements with the well-established benefits of physical activity on elderly with early dementia.

Methods: A total of 204 Chinese elderly with early dementia, defined as individuals aged 65 or above with clinical dementia rating (CDR) of 0.5 to 1, were randomised into dance-movement therapy (DMT), physical exercises (EX) and waitlist control (Control). Both DMT and EX groups received a 12-week semi-weekly intervention, with each session lasting for one hour. Cognitive functioning was measured via cognitive tests (Digit Span Test, Fuld Object Memory Evaluation and Trail Making Test) whereas psychosocial well-being and daily functioning were measured using self-reported scales (Abbreviated Geriatric Depression Scale, de Jong Gierveld Loneliness Scale, Visual Analogue Scale, and Lawton Instrumental Activities of Daily Living). Neuropsychiatric symptoms were measured via an informant reported scale (Neuropsychiatric Inventory). Assessments were performed before randomization, post-intervention (3-month), at 6-month, and at 12-month. Preliminary data from baseline and 3-month were analysed using linear mixed-model (LMM), to preserve intention-to-treat principle using maximum likelihood estimation.

Results: The mean age of the sample was 79.1 years old and the majority of them were female (82%), widowed (54%), with no formal education (36%). Using a linear mixed model with Subjects as random effects, significant Group X Time effects were found in depressive symptoms [$F(2, 195) = 3.76, p = .025$], loneliness [$F(2, 196) = 6.28, p = .002$], daily functioning [$F(2, 197) = 4.39, p = .014$], and negative mood [$F(2, 196) = 3.18, p = .044$]. Pairwise comparisons using Bonferroni test set at $p < .016$ showed significant improvements in depressive symptoms, loneliness and daily functioning but not negative mood in the DMT group compared to the Control group. The improvement in loneliness of the DMT group was also significantly greater than the EX group. None of the changes of the EX group were significantly different from the Control group. No significant Group X Time effects were found in cognitive functioning.

Discussion: The preliminary findings suggested that DMT may have therapeutic effects in elderly with dementia in comparison to Control, particularly on psychosocial well-being and daily functioning. This study is still ongoing. Follow-up data will be collected from the participants to study the long-term effects of DMT and EX on the progression of dementia.

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MIND-BODY INTERVENTIONS AMONG CAREGIVERS OF PATIENTS WITH CANCER: RESEARCH SYNTHESIS AND STATE OF THE SCIENCE

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Background: An estimated 2.8 million Americans provide care to a cancer survivor with the average duration of caregiving being seven years¹. Caring for a cancer survivor results in psychological distress that is often greater than the distress experienced by the survivors, leading to marked reductions in caregiver health and quality of life (QOL).²⁻⁴ Consequently, interventions aimed at improving overall QOL in caregivers are warranted.⁵ Tai Chi/Qigong (TCQ) are popular multi-modal mind-body exercises that show great promise in addressing a broad range of biopsychosocial factors central to supportive cancer care. The purpose of this review is to explore the efficacy of mind-body interventions on QOL outcomes among caregivers of patients with cancer.

Methods: Articles were retrieved from Pubmed and ScienceDirect using *caregiver*, *cancer*, *mind-body*, *yoga*, *tai chi*, and *qigong* as key search terms. Inclusion criteria: 1) quantitative articles published during or prior to 2017; 2) adult patients with cancer and their caregivers; 3) mind-body as the main intervention; and 4) quality of life as outcome. Exclusion criteria: 1) qualitative studies; 2) reviews or meta-analysis; and 3) dissertations.

Results: Five articles were eligible with four studies completed among patient-caregiver dyads and one study specific to caregivers. All studies were single-arm pilot studies with four studies and one study using yoga and mindfulness based stress reduction, respectively. No studies were found with TCQ. Studies reported improvements in caregiver QOL and physical function with two studies reporting a decrease in sleep disturbances.

Discussion: Most studies evaluated caregivers have included mind-body interventions delivered in dyads. While this approach has merit, receiving mind-body alongside the patient could both decrease the needed 'downtime' from burdensome responsibilities of caregivers, and also prevent training that more directly addresses unique psychological and physical needs of caregivers. Additional research is needed specific to the needs of caregivers using TCQ as the intervention.

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PRACTICE CHARACTERISTICS OF MINDFULNESS MEDITATION PRACTITIONERS

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Background: Mindfulness meditation has recently gained popularity in the Western world. However, we know little about who is practicing and how they practice. We collected survey information on practice characteristics of 203 mindfulness meditation practitioners while validating the Mindfulness Self-Efficacy Scale. Weekly practice adherence has been shown to affect positive health outcomes. We performed a secondary analysis to determine practice characteristics among mindfulness meditation practitioners in an attempt to determine what characteristics contribute towards higher frequency of weekly practice.

Methods: In addition to weekly practice adherence, we examined data on age, gender, length of practice, instructor status, if they had participated in a mindfulness-based stress reduction (MBSR) program, and if they had attended a silent meditation retreat (SMR). Spearman's correlations for weekly practice adherence versus the other variables were calculated. We then ran a linear regression model with weekly practice adherence as the dependent variable and the other variables as predictors.

Results: Most of our study participants were female (n=147) and middle aged (M= 50 years, SD= 14). A majority of study participants (53%) had meditated for at least 4 years; practiced at least 4 times a week (58%); participated in MBSR (57%); attended a SMR (64%); and were not instructors (68%). Weekly practice adherence was significantly correlated with age ($\rho = 0.15, p < 0.05$), being an instructor ($\rho = 0.16, p < 0.05$), with *not* participating in MBSR ($\rho = -0.15, p < 0.05$). The linear regression model significantly predicted the variance in weekly practice adherence ($R^2 = 0.32, F(8, 160) = 2.2, p < 0.05$), with only instructor status and MBSR non-participation being significant unique contributors to the model.

Conclusions: Understanding what characteristics of mindfulness meditation practitioners enable them to practice frequently is useful in guiding newer adopters of this mind-body practice to practice more often. While our results demonstrated that older participants practiced more, age did not significantly contribute to the regression model. Mindfulness teachers practiced more often, a relationship that makes intuitive sense; however, those who had participated in an MBSR program tended to practice less often during the week. Intensive training programs may need to evaluate methods to increase long-term practice frequency.

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PRAYER IN COLLEGE STUDENTS IN THE WAKE OF HURRICANES KATRINA AND RITA: PREDICTING POST-TRAUMATIC STRESS

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Risks to physical and mental health in the wake of hurricanes are numerous and previous research has pointed toward increased spirituality and religiousness as related to decreased psychological stress in post-disaster settings. Importantly, post-traumatic stress (PTS) is particularly problematic for African-Americans due to pre-disaster health disparities. Recent news coverage of Hurricanes Harvey and Irma publicized the plight of hundreds of college students stranded in the midst of flooding and power outages scrambling to evacuate dorms and campus buildings. College students face limited support in post-disaster settings as many live far from family, friends, and their spiritual centers. In light of the protective role of spirituality and religiousness and vulnerability of students removed from support networks, scholars must examine the unique contribution of prayer in post-disaster settings to support these and other vulnerable individuals and communities. This study examined relationships among prayer, other coping strategies, and student-reported PTS following Hurricanes Katrina and Rita between African-American ($n=233$) and White ($n=124$) college student groups. We anticipated that as use of prayer increased, PTS would decrease for both groups, and that a stronger relationship would emerge for African-American students.

Results from a secondary data analysis revealed that African-American students more often used prayer ($t=7.18$, $pd=0.76$) and active coping strategies ($t=2.02$; $pd=0.23$) than did their White peers. Correlational analyses did not reveal a statistically significant relationship between prayer and PTS as hypothesized. Using multiple hierarchical regression, avoidant coping strategies accounted for the largest variation in PTS for both groups as would be expected, though the relationship was stronger for African-American students. It remains important that health professionals operating within higher education settings educate and support students in the management of PTS to avoid long-term, adverse health effects. Sampling, survey methods, and PTS measures limit generalizability and temper findings. Directions for future research include use of PTS measures that account for severity and cultural context, enhanced measures of religion and spirituality, comprehensive psychometric examination of coping measures, and longitudinal data collection of health-related variables in post-disaster settings.

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PREDICTORS OF RESPONSE TO A BRIEF MINDFULNESS INTERVENTION AMONG PROBLEMATIC ALCOHOL USERS

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Understanding characteristics of individuals who respond to mindfulness-based interventions (MBIs) can provide insight into who may be best suited for these types of interventions. Such research is consistent with the precision medicine initiative. The current study recruited problematic college student drinkers who were randomized to receive one of three brief (10 minute) interventions: mindfulness, relaxation, or control. The mindfulness and relaxation groups listened to an audio recording of either a mindfulness meditation or relaxation exercise; the control group completed a word search puzzle. Trait mindfulness (Five Facet Mindfulness Questionnaire; FFMQ), state mindfulness (Toronto Mindfulness Scale; TMS), affect (Positive and Negative Affect Schedule; PANAS), and urge to drink (single-item Likert scale) were collected at baseline. Participants completed measures of state mindfulness, affect, and urge again after the intervention. Participants ($N=207$; 76.3% female) had a mean Alcohol Use Disorders Identification Test (AUDIT) score of 10.03 ($SD=4.28$). Regression analyses predicted post-intervention outcomes (TMS subscales, PANAS-negative affect [NA] and positive affect [PA], urge) from baseline FFMQ and AUDIT scores, controlling for baseline levels of each dependent variable and stratified by condition. Significant models are reported here (all $ps<.05$). For those who received the mindfulness intervention, higher FFMQ Acting with Awareness predicted decreased NA and urge to drink; higher FFMQ Describe predicted decreased TMS Decentering; and higher FFMQ Observe predicted increased urge. For those in the relaxation intervention, higher FFMQ Nonreactivity predicted increased NA, and higher AUDIT predicted increased urge. For the control group, higher AUDIT predicted increased NA and urge, and decreased PA. Given that Acting with Awareness predicted both decreased NA and urge to drink in the mindfulness condition, individuals high on this subscale may respond particularly well to brief mindfulness interventions. Those with high levels of Nonreactivity and high AUDIT scores may not be the best candidates for a brief relaxation intervention. Results provide some insight into who may respond best to a brief mindfulness vs relaxation intervention. Future research should explore these variables with lengthier MBIs and over a follow-up period.

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PROBLEMATIC INTERNET USE AND PHYSICAL HEALTH: THE ROLE OF MINDFULNESS

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Problematic patterns of internet use (PIU) are increasing exponentially and are associated with several negative psychological and social consequences. The effect that these behavioral patterns have on physical health is less established. Mindfulness has been negatively associated with problematic internet use and positively associated with health. The current study sought to examine the relationship between problematic internet use and multiple domains of health. The primary aim was determine if mindfulness was a mediator in the relationship between problematic internet use and overall health. Participants were 353 undergraduate students from a college in the Northeast. Participants completed several self-report questionnaires including: the Five Facet Mindfulness Questionnaire, the Internet Addiction Scale (IAT), the Perceived Stress Scale (PSS-14), and the SF-36. There were significant negative correlations between the IAT and domains of health ($r=-.24$). Higher scores on the FFMQ were negatively correlated with the IAT ($r=-.34$) and positively associated with better health via the SF-36 ($r=.32$). Using the Kenny and Baron approach, we found that our model did support mindfulness as a partial mediator between PIU and health. In terms of facets of mindfulness and PIU, the IAT was significantly negatively correlated with two of the facets of mindfulness, acting with awareness ($r=-.46$) and nonjudging of experience ($r=-.33$). Addictive behaviors such as problematic internet use may lead individuals to be less mindful in their environments and be one pathway to poorer health. Mindfulness based programs have been efficacious with individuals diagnosed with internet gaming addictions and should be examined for use with individuals with PIU to help buffer negative health and psychosocial consequences.

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SELF-COMPASSION AND MINDFULNESS BEHAVIORAL PRACTICES: RELATIONSHIPS WITH WELL-BEING

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Background: The association between mindfulness practice and well-being is well documented. Less well researched are the association between self-compassion practice and wellbeing and the interaction of self-compassion and mindfulness practices in relation to wellbeing. This study examined these relationships. It was posited that self-compassion may strengthen the association between mindfulness and well-being.

Methods: Participants ($n=616$, median age=46 years, women=74%, married=44%, working=64%, non-hispanic white=66%, 16 years of education=51%, in good to excellent health=86%) completed Stanford's Well for Life Scale, an on-line survey measuring demographics and 10 domains of wellbeing: social connectedness, lifestyle behaviors (including diet, PA, and sleep), physical health, stress/resilience, emotional health, purpose and meaning, sense of self, finances, spirituality/religiosity, creativity. Overall wellbeing was calculated by summing the domain scores.

Multiple linear regression models were run to assess associations between mindfulness and self-compassion practices and well-being. Mindfulness was measured by embodied-observing practices (breathing deeply, gently stretching, noticing your senses) and by non-reactive practices (observing emotions and thoughts as they arise rather than being caught up in them). Self-compassion was measured by practices of supportive, loving kindness toward oneself.

A Wald test examined the interaction of self-compassion with mindfulness embodied-observing and mindfulness non-reactive. Models were adjusted for age, gender, education, marital and employment status.

Results: At the rate of sometimes to very often, 72% of participants practiced embodied-observing mindfulness, 56% practiced non-reactive mindfulness, and 61% practiced self-compassion. Results indicate that frequent practice of self-compassion, embodied-observing and non-reactive mindfulness were each associated with higher well-being ($p<0.005$), with the magnitude of association of self-compassion greater than the associations of the two measures of mindfulness with well-being. Unexpectedly, self-compassion did not modify the association between either measure of mindfulness and well-being.

Conclusion: Self-compassion and mindfulness practices are each strongly associated with well-being. The finding that self-compassion did not modify mindfulness with respect to wellbeing leaves questions about mechanisms of the relationships among mindfulness, self-compassion and wellbeing.

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SHEDDING LIGHT ON THE RELATIONAL INFLUENCES OF YOGA ON AND OFF THE MAT THROUGH QUALITATIVE AND QUANTITATIVE METHODS

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Throughout the last few decades, the mind-body practice of yoga has seen an unprecedented rise in popularity both from the general population and the scientific community. Despite the wide-array of salutary health benefits that have been demonstrated, a clear void is present in the yoga literature investigating the ways in which yoga impacts connections with oneself and social relationships (which are invaluable to one's health and wellbeing). The overarching aim of the present study was to utilize both qualitative and quantitative methods to better understand the influences of yoga on the largely neglected "relational" (intra- and interpersonal) outcomes.

Participants were community-dwelling yoga practitioners ($N=107$), engaging in yoga at least once a week recruited for a prospective 21-day daily diary study to examine the associations between yoga and relational outcomes. First, open-ended questions ($n=107$) and in-depth interviews ($n=12$) were analyzed for emergent themes using a content analysis and constant comparison approach. Four emerging themes were identified (i.e., yoga generates calm states, mindfulness, (self-)compassion, and social connectedness) culminating in the development of a conceptual model of how yoga may work to bring about relational benefits. This line of inquiry was then extended to intensive longitudinal data to investigate the associations of daily yoga practice with mindfulness, (self-)compassion, and social connectedness, to better understand how relational benefits would manifest in regular practitioners of yoga ($n=104$) in a real world setting. Multi-level analyses indicated that on days when an individual practiced more yoga than their usual, greater mindfulness ($b=2.93$, $SE=0.39$, $p<.05$) and self-compassion ($b=1.45$, $SE=0.46$, $p<.05$) were reported. 1-1-1 multilevel mediation models demonstrated yoga had an indirect effect on both compassion and social connectedness through increases in mindfulness at the within- and between-person levels. In models testing self-compassion as the mediator, the indirect effect of daily yoga practice on compassion was significant, although limited to the within-person level.

Collectively, findings demonstrate relational benefits are: (1) perceived and experienced through daily yoga practice across diverse yoga styles and experiences, and (2) "dynamic" phenomena varying substantially within-persons over time and in sync with daily yoga practice. While further prospective and experimental research is warranted to corroborate these preliminary findings, a routine yoga practice appears to hold promise in having a positive impact (on and off the mat) on preserving and strengthening the intra- and interpersonal connections which constitute the building blocks of our day-to-day lives.

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SYMPTOMS OF DEPRESSION, ASPECTS OF MINDFULNESS AND PARASYMPATHETIC ACTIVITY IN PATIENTS WITH HEART FAILURE

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Research shows that elevated depression symptoms are associated with reduced parasympathetic activity, which is related to increased morbidity and mortality in patients with cardiovascular disease. In contrast, trait mindfulness is associated with increased parasympathetic activity. During exertion, sympathetic discharge is increased and parasympathetic stimulation is withdrawn, resulting in increased heart rate. Vagal reactivation is an important cardiac deceleration mechanism after exercise, and indicative of parasympathetic responsiveness. Heart rate recovery (HRR) following exercise is a tool used to assess parasympathetic activity. There is limited information on trait mindfulness and parasympathetic activity in patients with Stage C symptomatic heart failure (HF). By discovering the relationships among depression symptoms, specific facets of trait mindfulness, and autonomic activity, more focused treatments may be developed for patients with HF.

Methods: 70 Stage C patients with HF (HF with preserved ($n = 33$) and reserved ($n = 37$) ejection fraction) (mean age = 65.69 +/- 8.23) were examined for depression symptoms using the Beck Depression Inventory (BDI), facets of mindfulness using the Five Facets of Mindfulness Scale (FFMS). Parasympathetic activity was assessed by examining HRR in response to Bruce protocol bicycle ergometry. Linear multiple regression analyses were performed to examine independent relationships among facets of mindfulness, depression symptoms, and HRR.

Results: Depression scores were negatively associated with HRR (delta $R = .058$, Beta = .252, $p = .044$), whereas non-reactivity to inner experience was positively related to HRR (delta $R = 0.085$, Beta = -.290, $p = .015$). Depression Symptoms were negatively related to non-reactivity (delta $R = .11$, Beta = -.353, $p = .004$). In conclusion, our findings suggest that interventions that enhance facets of mindfulness such as, non-reactivity to inner experience may reduce depression in HF patients and may improve cardiac function. However, this was a cross-sectional study and prospective research is needed to confirm whether facets of mindfulness can mediate changes in depression symptoms and parasympathetic activity.

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THE ASSOCIATION BETWEEN RELIGIOSITY AND 30-DAY UNSCHEDULED RE-ADMISSIONS IN HOSPITAL SURVIVORS OF AN ACUTE CORONARY SYNDROME

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Background: Predictors of early readmission after discharge for an Acute Coronary Syndrome (ACS) have mainly included sociodemographic, clinical and psychosocial variables, but the association between religiosity and unscheduled 30-day readmissions among survivors of an ACS is unknown.

Methods: We used data from 1,929 patients hospitalized for an ACS at six medical centers in Central Massachusetts and Georgia (2011–2013). Strength and comfort from religion, patients praying for their health (petition prayers) and awareness of others praying for their health (intercessory prayers) were self-reported at the time of hospital enrollment. Thirty-day unscheduled all-cause readmissions were validated from hospital records. Modified Poisson regression analyses estimated relative risks (RR) for unscheduled readmissions adjusting for baseline characteristics.

Results: Patients were on average 61.1 years old, 33.2% were women and 81.2% were non-Hispanic Whites. Approximately 86% reported strength and comfort from religion, 61% prayed for their health and 89% were aware of others praying for their health. Overall, the risk of an unscheduled 30-day readmission was 10.4%. A great deal of strength and comfort from religion was not associated with early unplanned readmission (aRR: 1.01; 95% CI: 0.67–1.53), nor were reports of intercessory prayers (aRR: 0.82; 95% CI: 0.56–1.21). Petition prayers was associated with a higher risk of early readmission after adjusting for several sociodemographic and clinical characteristics (aRR: 1.37; 95% CI: 1.02–1.84), but this association was attenuated after accounting for a number of psychosocial characteristics (aRR: 1.28; 95% CI: 0.95–1.72).

Conclusion: A majority of survivors of an ACS reported religious engagement. Patients who prayed for their personal health had a higher risk of an early unplanned readmission compared with those who did not pray for their health. Identifying and addressing the religious needs of patients may help facilitate their recovery process from acute illness.

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Keywords: Acute Coronary Syndrome; Cardiovascular disease; Religiosity; Readmission; Spirituality.

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THE EFFECT OF YOGA PRACTICE ON PHYSIOLOGICAL STRESS AND WELL-BEING IN DIABETES PATIENTS

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Objective: The present study explored if improvements in self-reported stress and well-being occur concurrently with a reduction in the physiological stress response in adults with type 2 diabetes mellitus (T2DM) after an holistic yoga program. Previous studies have found significant improvements in different dimensions of mental health following yoga practice in T2DM patients, but no study has examined the link between psychological and physiological stress in this population.

Methods: A quasi-experimental design was used to evaluate pre- vs. post-test self-reports of stress and well-being in 7 post-menopausal women aged 50–65 with no previous yoga experience. These women completed an 8wk yoga program and were instructed to collect saliva samples so that diurnal curves of cortisol and dehydroepiandrosterone (DHEA) could be observed. Paired t-tests were used to assess pre- and post-intervention differences, with Pearson correlation to determine associations among variables. Significance was set at $p \leq 0.05$.

Results: Participants showed blunted morning cortisol levels and higher than normal DHEA values. After yoga intervention, the diurnal curves of both cortisol and DHEA showed a trend toward improvement with reduced DHEA and increased cortisol upon waking. Interestingly, morning cortisol levels were significantly correlated with perceived stress ($r = -0.77$, $p = 0.03$) and positive emotions ($r = 0.80$, $p = 0.02$). Morning DHEA significantly correlated with positive emotions ($r = -0.81$, $p = 0.04$), while DHEA levels at noon correlated with perceived stress ($r = 0.87$, $p = 0.02$) and positive and negative emotions ($r = -0.94$, $p = 0.005$, and $r = 0.90$, $p = 0.01$, respectively).

Conclusion: Although absolute changes in stress hormones were not statistically significant, a trend toward a return to normal values following yoga was observed along with significant correlations between physiological indicators of stress and perceived well-being. These data suggest a relationship between mental health and physiological stress in T2DM, and identify a need for future studies to investigate the implications of these findings for the overall physical health of T2DM patients.

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THE IMPACT OF RELIGIOUSNESS/SPIRITUALITY ON PREPAREDNESS FOR END-OF-LIFE CARE AMONG FAMILY CAREGIVERS: A QUALITATIVE STUDY

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End-of-life (EOL) care presents family caregivers with daunting challenges, including the burdens of day-to-day care, the complexities of EOL decisions, and the grief associated with terminal illness. Growing interest has focused on the concept of “preparedness” for managing these tasks. This study explored whether caregivers’ sense of preparedness might be influenced by religious or spiritual (R/S) factors. Using qualitative methodology, we examined some of the practical functions that R/S involvement might serve in promoting or diminishing perceived readiness for EOL care. Individual, in-depth interviews were conducted with family members caring for cancer patients with terminal disease, at a large southern US oncology center. The majority of caregivers were spouses (64%), most were white (72.7%), and they were coping with a range of disease sites. Three investigators rated transcribed transcripts using thematic analysis. Data were coded using NVivo 11 software. Recruitment progressed until data saturation. Participants identified several ways in which their sense of preparedness was enhanced by R/S involvement. These major themes included provision of (1) emotional comfort; (2) perceptions of divine control; (3) support from clergy; and (4) accommodation of uncertainty or anger. Less common themes included the role of R/S factors in solidifying family cohesion, and in strengthening communication with the medical team. These results provide an important platform to support further work in this area of palliative care. They suggest that R/S involvement may enhance a sense of preparedness for EOL care among some family caregivers. Emotional comfort, a restored sense of control, and social support may be especially significant in promoting perceived readiness. As might be expected, these effects centered mainly on emotional and interpersonal aspects of EOL care. We found few indications that R/S might influence preparedness for other EOL domains, such as making challenging treatment decisions (e.g., advance directives, hospice) or managing financial tasks (e.g., estate planning). These would be useful to explore in further research.

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VINYASA FLOW; METABOLIC COSTS AND LAB-BASED ESTIMATES WITH HIP-BASED AND WRIST-WORN WEARABLE SENSORS

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Background: Vinyasa flow yoga, a faster paced yoga class, is a popular form of exercise in the United States. However, the energy expenditure (EE) is unknown. Though the Oxycon Mobile is a gold standard for the measurement of EE, its use presents a challenge as it interferes with yoga practice due to the equipment required (e.g., leads, cords, mask). There is a need to test more portable devices to measure EE during yoga. The hip-worn Actigraph GT3X+ (AG) and wrist-worn GENEActiv (GA) are small portable devices that measure EE and have not yet been validated for EE in yoga. The purpose of this study is to determine the EE of a vinyasa flow yoga class and validate the AG and GA for measuring EE in a vinyasa flow yoga class.

Methods: Participants were fitted to a mask attached to the Oxycon Mobile (placed in a backpack). An AG was placed on the left hip and a GA was placed on the non-dominant wrist. A Polar heart rate monitor and strap was worn around the chest, which fed instantaneous heart rate into the Oxycon program. Participants were randomized to an initial resting activity (sitting or lying down) before completing the vinyasa flow yoga video (30 minutes). The AG data was scored using the Freedson VM3 (2011) and the Freedson Adult (1998) algorithms in the Actilife software platform. EE from GA were derived using cut points from Esliger et. al. (2011). Date and time filters were added corresponding to the time stamps recorded by the tablet video files of each yoga session. Kcals and METs expended by each participant were calculated using the participants reported bodyweights. Data was analyzed using SPSS. A dependent samples t-test, an intraclass correlation coefficient (ICC), and mean absolute difference were used to determine agreement between variables.

Results: After data screening, 22 subjects (5 male, 17 female) were included in the final data sample. According to the Oxycon, participation in vinyasa flow required energy expenditure of 3.2 ± 0.4 METs. There was no relationship between the Oxycon, AG [ICC -0.01 95% CI (-0.03, 0.05)], or GA [ICC -0.03 95% CI (-0.08, 0.01)]. The mean difference in METs for the AG was -2.1 ± 0.6 and GA was -1.4 ± 0.6 (all $p < .01$).

Conclusion: According to the Oxycon, participation in a vinyasa flow yoga class met the criteria for moderate-intensity physical activity. The AG and GA consistently underestimated EE. More research is needed to determine an accurate measurement for EE during yoga using a wearable device.

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C099

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ASSOCIATION OF OMEGA-3 POLY-UNSATURATED FATTY ACIDS AND DEPRESSIVE SYMPTOMS

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Background: Dietary omega-3 poly-unsaturated fatty acids (n-3 PUFAs), including EPA and DHA, are primarily consumed through fish intake and have been associated with decreased depressive symptoms in some studies. Results from randomized controlled trials indicate that n-3 PUFAs can be an effective treatment for those who are depressed, but the results from individual studies vary and may not represent the general population. In addition, observational studies do not show a clear relationship between fish intake and depressive symptoms, and few studies have been conducted among a nationally representative sample of United States residents.

Methods: This study analyzed the relationship between n-3 PUFAs and depressive symptoms among 10,907 adults from the 2011–2014 National Health and Nutrition Examination Survey. Depressive symptoms were measured by the Patient Health Questionnaire and categorized based on severity. Fish consumption was measured by the 30-day food frequency questionnaires, and EPA and DHA consumption was measured by the 24-hour dietary recalls. Fish consumption was categorized based on the total number of meals within four groups: all fish, non-breaded fish, breaded fish, and shellfish. The covariates included age, gender, race, education, marital status, smoking status, health status, antidepressant use, and fish oil supplementation. The baseline category logit model was used to assess the relationship between fish meal consumption and EPA+DHA with depressive symptoms.

Results: In the adjusted analysis, those in the highest quartile of EPA+DHA consumption had a significantly lower odds of being in the highest depression category compared with the lowest depression category (OR =0.373, 95% CI: 0.172, 0.809). Those who consumed any shellfish had a significantly reduced odds of being in the highest depression category compared with the lowest depression category (OR = 0.709, 95% CI: 0.55, 0.92). Any fish, breaded fish, and non-breaded fish consumption were not significantly associated with the severity of depressive symptoms.

Conclusion: Consuming shellfish or a higher amount of EPA+DHA may be associated with a reduced odds of having severe depressive symptoms among United States residents. Further research should be conducted among longitudinal studies to confirm these results.

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C100

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COMPARISONS OF FOODSERVICE STAFF AND PARENT PERCEPTIONS OF THE NUTRITIONAL QUALITY OF SCHOOL BREAKFAST

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Purpose: Parent perception of the quality of school meals has been identified as a predictor of participation in school lunch. Although some parents have negative perceptions of school lunch, foodservice staff (FSS) perceive the quality of school lunches positively, suggesting differences in perception between parents and FSS. This study examines differences between parent and FSS perspectives of the nutritional quality of school breakfast in a rural area using visual examples of breakfast food currently served in (blinded state) public schools.

Methods: Data were collected via a cross-sectional survey of 282 parents of children in grades K-12 and 22 FSS in rural areas. Respondents were shown 12 pictures of food served as part of the school breakfast program in (blinded state). Respondents identified if they believed the pictured meal to be “healthy” or “unhealthy” and gave a short justification for their response. A content analysis was conducted for the response justifications.

Results: For nine of the 12 pictures, a higher percentage of FSS perceived school breakfast pictures as healthy compared to parents. Content analysis identified three emergent themes among responses: overall appearance (portion size, appearance or appeal of meals, whether meals were fresh or processed), nutritional component of breakfast (meal described as complete or incomplete, discussion of specific nutrients or sugar content), and specific foods to be or not to be served (respondents described a specific food rather than a broader nutrient or food category).

Conclusions: Results indicated differences between parent and FSS perceptions of the healthiness of school breakfast and identified parent concerns regarding the quality of school breakfast. Results from content analysis suggests that parents have concerns with processed foods, as well as foods and beverages high in sugar. Findings show FSS generally perceive most school breakfasts as healthy and indicate a potential disconnect between FSS and parent conceptions of “healthy”.

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DESIGNING A PATIENT-CENTERED CLINICAL TRIAL FOR PROMOTING FLUID CONSUMPTION AMONG PATIENTS WITH NEPHROLITHIASIS

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Background: Nephrolithiasis impacts nearly 10% of the U.S. population, with the five-year recurrence rate ranging between 30–50%. Fluid consumption is critical for preventing a recurrence yet many patients fail to meet fluid consumption guidelines. This study sought to identify patient perspectives on barriers to fluid consumption and intervention elements that would facilitate recruitment and retention in a clinical trial.

Methods: Patients (*N*=19) with a history of kidney stones were recruited from medical clinics and an online advertisement. A researcher led groups of 3–5 patients in a semi-structured discussion that was digitally recorded and transcribed. Data were reduced to meaning units and analyzed using inductive content analysis.

Results: Patient-reported barriers to increasing fluid consumption involved concerns about the volume required, dissatisfaction with flavor and mineral content, and the disruptive impact of frequent bathroom trips. Patients recommended recruiting for clinical trials via clinicians, targeting patients with a history of stones and advertising on social media. They indicated that recruitment should emphasize education or personal gain as incentives. Patients also identified several retention strategies, including successful prevention of stones, education, and monetary incentives. The most important outcomes for patients involved preventing a recurrence of stones, or reducing the pain, emotional distress, inconvenience, and duration of future episodes of stones. Patients varied in how quickly they needed to see fluid consumption changes to be convinced an intervention was effective, ranging from days to years.

Conclusions: Despite some apprehension about increasing fluid consumption, patients expressed interest in interventions to prevent recurrence of kidney stones and provided insights for designing patient-centered clinical trials to evaluate candidate interventions.

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DIFFERENCES IN FOOD SELECTION CRITERIA, NUTRITION LABEL USE, AND EATING BEHAVIORS AMONG YOUNG WOMEN AND MEN

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Women and men exhibit substantial differences in eating behaviors and rates of morbidity and mortality related to eating. An eating behavior with major differences by sex is weight-loss driven dieting. A behavior early in the sequence of weight-loss driven dieting behaviors is food selection, encompassing specific food shopping and nutrition label use at time of food purchase. Research on food selection and nutrition label use has only inconsistently examined data by sex. As a result, relatively little is known regarding women's and men's food selection criteria and nutrition-label use in relation to dieting and views of health. This study examined food selection criteria and nutrition label use in relation to weight-loss behaviors and views of health of 132 undergraduate students (53% female). Participants completed a survey assessing factors driving food shopping and nutrition-label use, as well as eating behaviors and views of health. Women reported significantly higher perceptions than men of the importance of eating healthy foods (*p*=.037). They were also more likely than men to report looking at calories, saturated fats, sodium, and vitamins when purchasing foods (*p*=.008, .008, .008, and .022, respectively). When asked about factors considered in food purchases, women gave significantly higher importance than men to calories, sugar, and brand (*p*=.009, .011, .042, respectively). Self-reported nutrition label use was associated with different factors. Among women, but not men, current dieting status significantly predicted food label use (*p*=.015). Among men, but not women, weight was a significant predictor of label use (*p*=.010). Consistent with prior findings, women and men also differed in dieting behaviors. Women were significantly more likely than men to report that they were currently trying to lose weight (54.3% vs 24.2%, respectively, *p*<.001). Women were also shown to have significantly higher rates of restrained eating behaviors compared to men (*p*=.001,) such as deliberately taking smaller portions to control weight (*p*<.001) or counting calories to consciously monitor weight (*p*=.004). Moreover, attempts at weight loss were shown to be related to different factors between men and women. In women but not men, health consciousness, nutrition label use, and the perceived importance of consuming healthy food were significantly related to trying to lose weight at the time of the survey (*p*<.001, .01, .032, respectively). These results suggest that weight loss might be related to different motivations and methods among young women and men. This study's findings have implications for the primary prevention of dysfunctional eating behaviors in women and men. Findings point to the importance of using female- and male-specific educational interventions given the different criteria women and men use in their food shopping and their differences in eating behaviors.

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EFFECT OF AGRICULTURE AND NUTRITION AWARENESS ON EATING BEHAVIOR: ANALYSES OF FRUITS AND VEGETABLES CONSUMPTION IN RURAL INDIA

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In India, the progress against a consistently low consumption of fruits and vegetables has been slow. Eating behavior has been recognized as a key factor for health improvement and disease prevention, with major efforts having been deployed around the world for its promotion. Although enhanced agriculture potentially leads to improved nutrient and health through eating behavioral pathway, there is scant empirical evidence. This aim of the research is to examine the single and combined effects of agricultural practice and nutrition awareness on fruits and vegetable consumption in rural India and whether nutrition awareness can have a reinforcing impact. The survey included questions on the household characteristics, farming activities, and consumption. A total of 427 households located across 32 villages and four districts in the state of Odish participated in the study. The influence of homegrown consumption and nutrition awareness on fruits and vegetables consumption was evaluated by a linear regression model analyses and the Poisson regression model analyses if there was a skew distribution for the outcome. All models adjusted household characteristics, food insecurity, marketing perception indicators and fruit and vegetable consumption reasons. Analyses were conducted for overall consumption and separately for fruits and vegetable. Results showed that higher homegrown consumption was associated with higher consumption on all outcome measures: fruits and vegetables ($\beta = 0.64$, $SE = 0.10$, $p = 0.008$); vegetables ($\beta = 0.56$, $SE = 0.11$, $p = 0.02$); fruits ($\beta = 0.62$, $SE = 0.06$, $p < 0.05$). Stratified analysis on Low- and High-awareness subgroups revealed that the positive effect of homegrown consumption on overall and vegetable consumption was twice stronger in the Low-awareness group compared to High. In contrast, for fruit consumption, that the influence of homegrown consumption was stronger among the High-Awareness group, although with a difference of lesser magnitude. Results are discussed in terms of the distinct contributions to healthy eating behavior stemming from the improved physical accessibility and higher income that accrue from farming practice. Future research and insights for promotion of fruit and vegetable consumption in rural and urban contexts in both developing and industrialized countries are discussed.

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EXAMINING DISPARITIES IN DIET QUALITY BETWEEN SNAP PARTICIPANTS AND NON-PARTICIPANTS USING OAXACA-BLINDER DECOMPOSITION

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Background: Several studies have reported that participants of the Special Supplemental Nutrition Assistance Program (SNAP – formerly titled the Food Stamps Program) have poorer diet quality than non-participants. This research aimed to quantify how much of this disparity is explained by demographic, household, and health-related factors using Oaxaca-Blinder decomposition analysis.

Methods: Cross-sectional data on 13,589 participants of the National Health and Nutrition Examination Survey (NHANES) years 2009 – 2014 were analyzed. To measure diet quality, Healthy Eating Index (HEI) 2015 total and component scores were calculated using each subject's 24-hour dietary recall data. Oaxaca-Blinder decomposition analysis was used to examine how much of disparity in HEI-2015 total score is explained by demographic (e.g., age, sex, race/ethnicity, education, marital status), household (e.g., household size, food security status, prepared meal purchasing), and health-related measures (e.g., BMI, smoking status). Current SNAP participants were compared to both SNAP-eligible non-participants and ineligible non-participants.

Results: The total gap in HEI-2015 total score between SNAP participants and ineligible non-participants was calculated to be 6.14. Selected measures explained 91% of this disparity. On the other hand, the total gap in HEI-2015 total score between SNAP participants and SNAP-eligible non-participants was calculated to be 3.10. Selected measures explained 78% of the disparity between these two groups.

Conclusions: A significant disparity in diet quality existed between SNAP participants and non-participants in the sample. Demographic, household, and health-related factors explained a significant amount of the disparity that existed between SNAP participants and in-eligible non-participants; however, they explained less of the disparity between SNAP participants and SNAP-eligible non-participants.

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EXAMINING THE RELATIONSHIP BETWEEN AGE AND DIET QUALITY IN BLACK WOMEN: A CROSS-SECTIONAL ANALYSIS OF NHANES DATA 2007–2012

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Background: Age is an established predictor of diet quality in the general population; however the relationship is not as clear among black women within different socioeconomic subgroups. The purpose of the present study is to assess the relationship between age and diet quality among Non-Hispanic black women within varying groups of educational attainment. This data may be used to identify demographic subgroups of black women that are more likely to have poor diet quality.

Methods: Cross-sectional data on 1,739 participants of the National Health and Nutrition Examination Survey (NHANES) 2007–2012 who self-identified themselves as Non-Hispanic black women were analyzed. Twenty-four-hour dietary recall data were used to assess diet quality via the Healthy Eating Index 2010 (HEI-2010). Multivariable-adjusted linear regression models were used to examine the association between age group (20–29, 30–39, 40–49 (reference), 50–59, 60–69, 70 and above) and HEI-2010 total score. Regression models were stratified by education group (< high school, high school or GED, some college, college degree or above).

Results: Approximately 16.7% of women in the sample had a college degree, and mean HEI-2010 total score was calculated to be 47.8 (± 0.6). Overall, women aged 20–29 had a significantly lower HEI-2010 total score compared to women aged 40–49 while women over age 70 had a significantly higher score. These findings were observed among women who reported they had some college education. No significant differences in HEI-2010 total score were found among the age groups in women with less than a high school diploma and women with a college degree.

Conclusions: Our findings suggest age has a significant and positive association with diet quality among black women with some college education. However, this association was not observed in all educational groups.

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IMPACT OF PERSONAL HEALTH BEHAVIORS ON PARTNER TRAIT PREFERENCE

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Introduction: Desired traits of a potential partner heavily influence the process of mate selection. Evolutionary psychology research suggests that women prefer more dominant, aggressive, and resource rich mates (Puts, 2010). Personality traits and gender roles have also been found to influence partner preferences, such that women of more traditional gender roles tend to value social prestige more and kindness less than egalitarian females (Rempala et al., 2014). However, research has not focused on how one's own health behaviors impact partner preference. The current study is aimed at investigating the association between personal health behaviors and preference for 14 partner traits.

Method: Participants were 137 single females ranging in age from 19 to 74 recruited via Amazon Mechanical Turk. Participants completed an online survey regarding engagement in health behaviors including alcohol use, tobacco use, tanning, exercise, and eating habits, following which they rated how desirable they perceived 14 characteristics in a potential romantic partner.

Results: Results indicate that of the characteristics assessed, loyalty/honesty were rated as most important across all participants. Inversely, religiosity/spirituality were the least preferred. Results suggest that participants' health behaviors influence preferences for partner traits. Partner trait preference was not significantly different between smokers and nonsmokers, nor for individuals who exercise frequently compared with individuals who report little to no exercise. However, a significant main effect emerged of diet on partner preference ($F(14,105) = 2.79, p < .01$). When partner traits were considered separately, it appears that individuals who eat healthier foods preferred their partners healthy and fit ($M = 12.77$) more so than did individuals who did not consume a healthy diet ($M = 9.49$). Further, results demonstrate that those individuals who consumed healthier foods more often took into account body type and height ($M = 11.20$) more so than did those whose diets were less healthy ($M = 9.02$).

Conclusion: This study indicates that an individual's health behaviors influence perceived desirability of partner characteristics. Individuals who report eating healthier foods prefer healthy and fit partners and may put more emphasis on physical characteristics such as height and body type. Previous research has demonstrated that partners influence health behaviors; if matching of health behaviors occurs during the partner selection process, it may limit the extent to which partners can influence health behavior change. Future studies may examine specifically the extent to which matching of health behaviors occurs, and its impact on engagement in health behaviors.

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THE ASSOCIATION BETWEEN PERCEIVED DISCRIMINATION AND SERUM ANTIOXIDANTS: RESULTS FROM THE MIDLIFE IN THE UNITED STATES STUDY

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Objective: Discrimination – the unfair treatment towards an individual because of his, her or their race, ethnicity or other identifying characteristic – is a common occurrence in the United States. Research over the past two decades has examined the association between perceived discrimination and various health outcomes. For example, prior studies have linked the social stressor to elevated blood pressure and hypertension. The relationship between perceived discrimination and antioxidants – micronutrients that help the body ward off the harmful effects of oxidizing free radicals – remains unclear. Thus, using objective, biological data from the Midlife in the United States Study (MIDUS), we investigated the association between perceived discrimination and serum antioxidants.

Methods: We conducted a cross-sectional analysis assessing the association between self-reported perceived discrimination and serum antioxidant concentrations among 990 participants in the MIDUS Biomarker Project. Perceived discrimination was measured using participants' self-reported responses to nine items belonging to the interpersonal discrimination scale. Serum concentrations of nine antioxidants (carotenoids and Vitamin E) were collected via fasting blood samples. We conducted regression analyses to assess the relationship between perceived discrimination and antioxidant concentrations using age-adjusted and additionally adjusted models (adjusting for demographics and health status).

Results: The association between perceived discrimination and individual antioxidants varied. Individuals with greater perceived discrimination were significantly more likely to have lower concentrations of 13-cis- β -Carotene and α -Carotene – two carotenoids that can be converted to retinol (Vitamin A). Specifically, for every standard deviation increase in discrimination, age-adjusted concentrations for 13-cis- β -Carotene and α -Carotene decreased by 6% and 9%, respectively. These associations remained significant in additionally adjusted models. Perceived discrimination was not significantly associated with any other carotenoid in additionally adjusted models.

Conclusions: Perceived discrimination was significantly associated with decreased concentrations of serum 13-cis- β -Carotene and α -Carotene. This study adds to the sparse literature assessing the relationship between perceived discrimination and antioxidants. Given the cross-sectional design of this study, further research is needed to explore the relevant pathways, particularly health behaviors, between perceived discrimination and serum antioxidants.

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THE GENERALIZABILITY OF THE SCOFF: A SYSTEMATIC REVIEW OF THE VALIDITY OF A WIDELY USED EATING DISORDER SCREEN

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Background. Current screening tools for eating disorders were developed to screen for anorexia nervosa (AN) and bulimia nervosa (BN) in young women. In recent years, awareness of disordered eating outside of AN and BN has increased. For instance, Binge eating disorder (BED), which is more prevalent than BN and AN, is now recognized as a distinct diagnosis in DSM-5. A much higher proportion of individuals with BED are older, overweight and male compared to individuals with AN and BN who are more likely to be younger, underweight to normal weight and female. One of the most widely used screening tools for eating disorders is the 5-item SCOFF questionnaire. The SCOFF was developed using a clinical sample of females with AN and BN. Indicative of its wide use, there are a number of validation studies which have been conducted on the SCOFF. There has not been a recent comprehensive review of these validation studies to assess evidence that the SCOFF is an adequate screening tool for eating disorders in populations outside of young, underweight to normal weight females who have AN or BN.

Methods. A PubMed search was conducted for the years of 1999 to 2017 for articles using the search term "SCOFF." Twenty of 106 articles provided some validation (e.g., sensitivity) and demographic information (e.g., age). These 20 articles were summarized in detail following PRISMA guidelines.

Results. The SCOFF tended to have higher sensitivity and specificity in studies using female samples with AN and BN. Several studies demonstrated lower sensitivity and specificity of the SCOFF in screening men, older women and individuals who are overweight, and for eating disorders other than AN and BN. Of the 20 studies, only two provided psychometric detail for BED. No studies provided psychometric detail for other newly specified DSM-5 eating disorders (i.e., atypical anorexia, low frequency or limited duration BN and BED, purging disorder, night eating disorder.).

Conclusions. This review of validation studies on the SCOFF demonstrates that the strong psychometric properties that have been used to justify its wide use have not been replicated among men, older women, racially diverse individuals, individuals who are overweight, and individuals with eating disorders other than AN and BN. Given the high rates of BED, and the newly specified eating disorders in DSM-5, a screening tool which is able to screen for a wider range of eating disorders in a variety of populations is needed.

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USING PROXIMITY & PRODUCT PLACEMENT MANIPULATIONS TO INFLUENCE SNACK SELECTION IN A FOOD PURCHASING SIMULATION

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Purpose: Small retail food outlets, like convenience stores, often provide a limited selection of healthy food options, possibly promoting less healthy food selection behaviors among customers. Interventions to promote healthier food choices in convenience stores have been conducted, but the most effective intervention strategies remain unknown and novel methods for improving consumer food selection are needed.

Methods: This study was conducted at rural county fairs in the Southeastern United States. The study implemented a food purchasing simulation with three different conditions. For the simulation, all participants were presented with 20 different individually packaged snack items mimicking the product mix typically found in convenience stores (20% healthier and 80% less healthy items). Participants were given \$5 cash to “purchase” as many or as few snacks as they desired. Participants in the Comparison Condition (n=27) were presented the foods on a shelf 10–12 feet away with healthier items distributed evenly throughout the shelf space. In the Shelf Placement Condition (n=27) the healthier options were placed at eye level in the center of the shelf that was 10–12 feet away. In the Proximity Condition (n=33) all of the healthier options were placed on a small shelf in close proximity to the research participant (within 1–2 feet) and all less healthy options were placed on a shelf 10–12 feet away. The Proximity condition was designed to simulate foods and beverages placed in a checkout aisle. Research condition, snack selections, and basic demographic information were recorded. A Kruskal-Wallis H Test was used to determine differences in the mean number of healthier items selected among conditions.

Results. Participants in the Comparison, Shelf Placement, and Proximity Conditions selected 0.63 ± 1.04 , 0.67 ± 1.30 , and 1.30 ± 1.24 healthier items (M \pm SD), respectively. The Kruskal-Wallis H test showed that there was a statistically significant difference in healthy food selection among the groups, $\chi^2(2) = 8.35$, $p = 0.015$.

Conclusions. Manipulating the foods and beverages in close proximity to customers, such as placing healthier options near the entrance to a store or near the register may be a helpful strategy for increasing the healthfulness of convenience store purchases.

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ASSOCIATION BETWEEN FOOD INSECURITY AND CVD RISK FACTORS IS MODERATED BY INTAKE OF FRUITS AND VEGETABLES IN LATINOS

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Background: Food insecurity has been consistently associated with CVD risk factors (i.e., obesity, type 2 diabetes, hypertension and hypercholesterolemia). Consumption of fruits and vegetables may reduce CVD risk factors among food insecure Latinos.

Objective: To examine the potential moderating effect of fruit and vegetable intake in the association between food insecurity and CVD risk factors in a sample of Latino men and women in the northeast U.S.

Methods: A representative community sample of Latino individuals was recruited from a community health center in Lawrence, MA. Food insecurity was measured with the 6-item USDA Household Food Security Scale. Fruit and vegetable intake, was measured with Block's Fruit and Vegetable Screener. CVD risk factors examined included: obesity assessed by body mass index (BMI), and diagnoses of type 2 diabetes, hypertension and hyperlipidemia abstracted from electronic health records. Covariates considered included: age, gender, education and BMI (except in the obesity model). Statistical analyses included multivariable logistic regression testing for interaction between food insecurity and diet.

Results: Overall, 51% of the sample were women and most self-identified as Dominicans (73%). Thirty-one percent of the sample experienced food insecurity and 79% consumed less than 5 servings of fruits and vegetables per day. Twenty percent of food secure participants and 23% of food insecure individuals consumed 5 servings or more of fruits and vegetables per day ($p=0.439$). In adjusted models, food insecurity was positively associated with type 2 diabetes in individuals consuming less than 5 servings of fruits and vegetables per day (OR=1.79; 95% CI=1.11–2.89) but not in individuals consuming 5 servings or more of fruits and vegetables per day. Interaction analyses showed that these estimates were significantly different from each other ($p=0.04$).

Conclusion: Among those who were food insecure, low consumption of fruits and vegetables, was associated with type 2 diabetes in this Latino sample. Studies are needed to confirm our findings. Further, longitudinal studies are needed to understand a potential causal relationship. Interventions to increase availability of fruits and vegetables among food insecure Latinos may help alleviate diabetes disparities in this vulnerable group.

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DO HIGHER PHYSICAL ACTIVITY LEVELS PRODUCE BETTER DIET QUALITY IN ADOLESCENTS?

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Consuming a well-balanced diet and engaging in regular physical activity are two important factors in maintaining a healthy weight, and in preventing a wide variety of chronic illness. The relationship between dietary intake and physical activity levels has previously been studied in adults and a moderate positive correlation was observed. (i.e., physical activity was higher at each increasing level of dietary healthfulness). This study aims to investigate whether the relationship between diet and activity seen among adults is similar or different among adolescents; specifically, the present study examines how moderate-to-vigorous physical activity (MVPA) relates to diet in adolescents by utilizing 2015 – 2020 Dietary Guidelines for Americans (DGA), 2010 Healthy Eating Index (HEI), and 2008 Physical Activity Guidelines for Americans (PAG). Data were provided by 86 healthy adolescents from the Fort Collins, Colorado area. Participants had an age range of 14 – 21 years with a mean age of 18.1 ± 2.1 years. An omnidirectional accelerometer (Actiwatch, Philips) was worn for one week to track physical activity levels. A self-reported dietary recall (ASA24®) was completed for two 24 hour periods to measure dietary intake. It was hypothesized that adolescents who spent more time engaging in MVPA would eat healthier diets (i.e., would score higher on the HEI and would meet more of the dietary guidelines). Participants had a mean caloric intake of 1885 ± 869 calories. Based on the HEI-2010 scoring guidelines, total HEI scores ranged from 23.64 – 92.75 and these adolescents had a mean HEI total score of 52.28 ± 1.80 . Only 8.1% of participants had a diet classified by the HEI as “good”, while 45.3% had a diet that “needs improvement”, and 46.5% had a “poor” diet. Only 16.3% of all participants met the PAG recommendation of at least 60 minutes per day of mostly MVPA. Of the participants who met the PAG, just 14.3% consumed a “good” diet according to the HEI. Most of the participants, 83.7%, engaged in 30 minutes or less MVPA per day. Contrary to the hypothesis, diet quality was not higher among those with increased activity levels; indeed, there were very few participants who are healthy diet or met PA recommendations. These data suggest that interventions aimed to improve both healthful diets and increased physical activity among adolescents are warranted.

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EXECUTIVE FUNCTION MODERATES THE RELATION BETWEEN MOMENTARY AFFECTIVE AND PHYSICAL STATES AND SUBSEQUENT DIETARY LAPSES

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Failure to adhere to a dietary regimen (i.e., dietary lapse) impedes weight loss. While studies using ecological momentary assessment (EMA; a data collection method gathering user feedback multiple times a day) have aimed to identify momentary changes in affective or physical states that trigger lapses, results have been inconsistent. Mixed results may be due in part to individual differences in executive function (EF)—or self-regulation skills such as the ability to plan and self-monitor—which may buffer the relation between negative affective or physical states and subsequent lapses. This study explored if baseline differences in EF influence the relation between intensity of affective and physical states and likelihood of subsequent lapse. We hypothesized a stronger relation between momentary elevations in boredom, tiredness, deprivation, sadness, stress, loneliness, irritation, and hunger and likelihood of lapsing among those with weaker EF.

Participants were 190 overweight adults in a behavioral weight loss treatment. Baseline EF skills, specifically planning, cognitive flexibility, and inhibitory control, were measured using the Dellsis-Kaplan EF System Tower Task, and affective or physical states and lapses were assessed in a 2-week EMA protocol at start of treatment. Generalized estimating equations demonstrated that, unexpectedly, the relation between momentary elevations in boredom and likelihood of subsequent lapsing were stronger for participants with stronger EF ($b=.03, p=.04$). By contrast, relations between momentary elevations in tiredness ($b=.02, p=.01$) and deprivation ($b=.02, p=.047$) and likelihood of subsequent lapsing were more robust for participants with weaker EF. We did not detect a moderating effect of EF on the relations between momentary elevations in sadness, stress, loneliness, irritation, and hunger and likelihood of lapsing.

Results suggesting higher EF increases likelihood of lapsing in response to boredom were unexpected; nonetheless, overweight people with stronger EF may become overweight for different reasons—such as overeating in response to boredom—than do overweight people with weaker EF. Results implying that higher EF may buffer against increased likelihood of lapsing in response to tiredness and deprivation supported our hypothesis. Those exerting EF frequently may anticipate resulting tiredness and deprivation, and thus can use their EF skills to plan meals and self-monitor hunger to avoid lapsing.

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EXPLORING HOW BICULTURAL AND ASSIMILATED CHILDREN INFLUENCE THEIR LATINA MOTHERS' DIET

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Purpose. Social and cultural factors influence dietary intake/behaviors. Research shows that mothers consume a lower quality diet when they have a child who is assimilated to the U.S. culture versus bicultural. The purpose of this study was to qualitatively compare and contrast how bicultural and assimilated children influenced their culturally traditional mothers' dietary intake/behaviors.

Methods. Separate semi-structured one-on-one interviews with 21 Mexican-origin mothers and their bicultural (n=11) or assimilated (n=10) children (10–13 years old) were conducted. We used framework analysis to reduce qualitative data to themes and subthemes. Surveys assessing mothers' daily fruit and vegetable intake, and sugary beverages, percent of calories from fat, weekly away-from-home eating, and percent of weekly grocery dollars spent on fruits and vegetables were also collected. Interview and survey data were analyzed separately and then compared between mothers of bicultural versus assimilated children.

Results. Survey data showed that mothers of bicultural children consumed a better quality diet than mothers of assimilated children. In qualitative interviews, mothers described several ways that their children's food preferences influenced their diet, cooking, food purchasing, and away-from-home eating, often differing by child's acculturation. For example, assimilated children typically preferred non-traditional foods and thus often persuaded their mothers to prepare or purchase these foods, resulting in mothers consuming these foods. Furthermore, mothers believed their children's food preferences both influenced and were influenced by their own feeding styles. Mothers of bicultural children described using more "Mexican" (i.e., authoritative) feeding styles that they believed shaped their children's palate into preferring traditional foods. Mothers of assimilated children explained that their children's preference for non-traditional foods resulted in their use of more permissive or indulgent feeding styles.

Discussion. Longitudinal research is needed to test the directionality between feeding styles and child's food preferences. Interventions may need to consider the reciprocal influences between mothers' feeding styles, children's food preferences, and how children influence their mothers' dietary intake/behaviors.

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EXPLORING THE DIETARY STRATEGIES, INFLUENCES, AND RATIONALES USED BY PATIENTS PREPARING FOR OBESITY SURGERY

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Introduction: Bariatric surgery promotes drastic weight loss by permanently altering the digestive system thereby restricting the amount of food one can consume. To promote health and long-term weight loss following surgery, individuals must make significant dietary and lifestyle changes. The ways in which patients prepare for bariatric surgery may impact their diet and weight management behaviors after surgery; however, little research explores patients' pre-surgery experiences. The goal of this study was to describe and explain how patients prepare for bariatric surgery.

Methods: 24 women and 6 men were recruited to participate in a two-year, mixed methods study. Data was collected in the form of diet and lifestyle questionnaires and qualitative interviews focusing on dietary behaviors, perceptions, and weight. Using a grounded theory approach, pre-surgery transcripts were coded for dietary behaviors, influences, and rationales by means of the constant comparative method. Three major themes emerged: Influences (factors that impacted patients' dietary behaviors and decisions), Strategies (tactics used to manage dietary influences), and Rationales (reasons for behaviors and decisions).

Results: Six influence categories emerged: Environmental, Psychological, Physical, Health, Circumstantial, and Surrounding People. These influences shaped participants' food related decisions and dietary strategy choices. Five strategy groups were identified: Portion Control, Substitution, Reduction, Implementation, and Elimination. Participants used between 1 and 15 techniques to ensure the successful implementation of these five strategies. They described two primary rationales for using specific strategy techniques: Health Promotion (to ensure healthy eating and weight loss) and Behavior Prevention (to avoid unwanted eating behaviors and weight gain). Due to participants' understanding that the surgery would be a "shock" to their bodies, Behavior Prevention was the more common rationale.

Conclusion: As patients prepare for bariatric surgery, they develop personalized ways of managing food and eating by employing a range of dietary strategies that promote health or prevent unwanted behaviors. Participants' contexts, experiences, and explanations for surgery influence their pre-surgery dietary behaviors and changes. Further research is needed to determine the link between pre-surgery and post-surgery dietary behaviors, strategies, and weight.

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FINANCIAL HARDSHIP AND POOR DIET QUALITY: A DECOMPOSITION ANALYSIS OF NEUROBEHAVIORAL AND SOCIOECONOMIC FACTORS

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Socioeconomic differences in diet quality have been well-documented, but the specific drivers of these disparities are unclear. To elucidate these factors, Oaxaca-Blinder decomposition examined neurobehavioral and socioeconomic variables that account for the gap in diet quality between adults with and without financial hardship. Primary household food shoppers [N=186; 83% female; mean age=44.1; 46% African-American, 31% non-Hispanic white, 11% Hispanic, 12% other/multiracial] reported their household socioeconomic status, food security, perceived stress, and experience of financial hardship (i.e., “somewhat hard” or “very hard” to pay for basic necessities). Diet quality was quantified by applying the Healthy Eating Index-2010 scoring system to dietary intake data collected through three 24-h diet recalls. A binary choice task assessed individual differences in discounting rates for delayed monetary rewards, and an operant response task assessed the relative reinforcing value of energy-dense snacks. Researchers used a 71-item auditing tool to document the number of obesity-promoting foods in the home environment (M=20.2, SD=8.6). Body mass index (BMI; M=31.2, SD=9.2) was calculated from measured height and weight. Roughly half the sample (51%) reported financial hardship. Participants endorsing financial hardship had lower HEI-2010 scores (M=58.9, SD=12.6) than those who did not (M=66.1, SD=15.1; $p<.001$). In a decomposition analysis adjusting for age, sex, and BMI, six predictor variables collectively explained 73% of the gap in HEI-2010 scores. Discounting rates for delayed monetary rewards ($p=.02$) and food insecurity ($p=.03$) accounted for 21.1% and 17.2% of the explained diet quality gap, respectively. Obesity-promoting foods in the home accounted for 15.4% of the gap, but was not statistically significant ($p=.054$). Relative reinforcing value of energy-dense snacks ($p=.19$), perceived stress ($p=.61$), and educational attainment ($p=.23$) did not account for statistically significant portions diet quality gap. However, an interaction ($p=.01$) was observed whereby greater relative reinforcing value of energy-dense snacks was associated with decreased diet quality only in those participants who were not experiencing financial strain ($p=.001$). Neurobehavioral processes may be novel targets in efforts to improve diet quality in financially disadvantaged adults. Funded by R01HL117804. NCT02073643.

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FOOD SECURITY AND GENDER MINORITY INDIVIDUALS IN THE SOUTHEAST UNITED STATES: A QUALITATIVE STUDY

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Background. Fourteen percent of American households are food insecure; meaning access to adequate food is limited by a lack of money and resources. Poverty, joblessness, and homelessness drive food insecurity. This problem may be especially significant for gender minority (GM) people (transgender/non-binary people). GM people are four times more likely than the national population to have annual household incomes below \$10,000, and it is estimated that joblessness and homelessness among GM people is double the national rate. GM people also face minority stressors that may contribute to drivers of food insecurity. There is little evidence describing GM people’s experiences with food insecurity. The current project investigated experiences with food insecurity among GM people living in the Southeast U.S., and how minority stress may influence food insecurity.

Methods. Semi-structured telephone interviews were conducted with 20 GM people, recruited via social media, residing in the Southeast U.S. Interviews were transcribed and coded for themes.

Results. GM people reported living in extreme poverty. They described how the conservative socio-political climate of the Southeast U.S. made it difficult to find employment and maintain a job, which were primary drivers of experienced food insecurity. Participants experienced discomfort with seeking food assistance due to explicit and passive discrimination, and for fear of reducing food availability for other, less fortunate, people. They reported being a primary caregiver for family members and prioritized the nutritional needs of others over their own. Stress from un- and underemployment, inadequate food supplies, caretaking duties, and discrimination were reported as significant contributors to their poor physical and mental health.

Conclusion. Poverty and food insecurity erodes GM people’s physical and mental health. GM people in our project faced substantial barriers—including un- and underemployment, and multi-level discrimination—that prevented them from affording adequate food. Possible public health solutions include: passing employment non-discrimination policy to protect GM people in the workplace; creating a searchable network of GM-friendly employers to assist GM people with finding employment; and building relationships between local food banks/pantries and LGBT organizations to create safe, welcoming environments to all persons in need of food assistance, regardless of gender identity.

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NUTRITION LITERACY: A MEDIATOR OF HEALTHY-EATING BEHAVIOR BASED ON THE SOCIAL ECOLOGICAL FRAMEWORK

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INTRODUCTION: Nutrition literacy (NL) is derived from health literacy, and which is used to elaborate individuals' health literacy regarding eating behavior. However, the link between NL and healthy-eating behavior was still unknown based on available evidence. The social ecological framework has been used widely to investigate the influencing factors of healthy-eating behavior. In this study, we expected to explore the role of NL between influencing factors and healthy-eating behavior among college students based on the social ecological framework.

METHODS: A cross-sectional and questionnaire-survey study comprising college students in Taiwan was conducted. Convenience sampling was used to select six schools: one national and one private university in each of the three regions: North, Central, and South Taiwan. In each school, 80 participants were recruited. Four-hundred twelve valid questionnaires were collected (effective response rate = 85.8%). The questionnaire used in this study was divided into four parts: self-rated NL, influencing factors of healthy-eating behavior, healthy-eating behavior, and demographic characteristics. Descriptive statistics, an independent samples t-test, a hierarchical multiple regression, and a mediation analysis were performed for data analyses.

RESULTS: College students' mean NL score was 4.32 (SD = .78, range = 1–6). In a social ecological framework, NL significantly predicted healthy-eating behavior ($\Delta R^2 = .054$, $\Delta F = 32.54$, $p < .001$), controlling for background, individual, interpersonal, environmental, and social-system factors. Among the 13 predictors across the four levels that predicted the healthy-eating behavior of college students, there were seven factors that were affected by the mediating effect of NL: social support from family (48.3%), healthy food proximity (43.1%), exposure to healthy-eating advocacy (42.4%), healthy eating attitude (41.4%), social support from peers (31.0%), healthy food preference (27.3%), and healthy-eating self-efficacy (25.9%).

DISCUSSION: This study suggests a prominent idea to improve NL and healthy-eating behavior at the same time. When improving the healthy-eating behavior of college students in the future, it is beneficial to develop the comprehensive intervention considering NL and multiple factors.

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PERCEPTIONS OF NEIGHBORHOOD FOOD ENVIRONMENT ARE POSITIVELY ASSOCIATED WITH HEALTH OUTCOMES IN LOW FOOD ACCESS NEIGHBORHOOD

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Introduction: The neighborhood food environment may either serve as a facilitator or barrier to healthy eating. The purpose of this study was to examine shopping and dietary behaviors of patrons of small food stores that traditionally do not sell many healthy food options within a low food access neighborhood.

Methods: All food outlets within one low-income predominantly African American neighborhood were identified. Trained research assistants conducted intercept interviews with individuals as they entered or left these food outlets. The interview included questions about food shopping behavior, diet and physical activity patterns, self-rated health, perceptions of their neighborhood food environment and demographic characteristics.

Results: Interviews were completed at 20 out of the 25 identified food stores in the neighborhood. A total of 214 individuals completed the intercept interviews in full (57.06% response rate). Half of the participants were 25–34 years of age, 72.90% were African American, over half (65.42%) were male and nearly half (45.79%) reported annual household incomes < \$25,000. Respondents reported shopping at the food outlet a median of twice per week (IQR = 3.85). Transport was by car by almost half and most participants (63.08%) shopped at the outlet because it was close to their residence. The majority of respondents were satisfied (56.07%) or very satisfied (27.10%) with the items available at the food outlet. Non-alcoholic beverages were purchased by the largest proportion of respondents (41.59%) followed by non-food items (35.05%), snack foods (29.91%) and alcohol (17.76%). Those who were often physically active (OR: 3.13; 95% CI: 1.62–6.02) and reported more positive perceptions of their neighborhood food environment (OR: 1.35; 95% CI: 1.02–1.79) were more likely to be in excellent or very good health compared to those in good, fair or poor health after adjustment for demographic factors. No relationship of significance was identified between perceptions of neighborhood food environment, dietary behaviors and health status.

Conclusions: Perception of the neighborhood environment may be related to health outcomes even in neighborhoods classified as having low access to healthy foods. This relationship may not be directly related to dietary behaviors but instead other pathways. Additional research may explore the identification of these pathways.

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PICKY EATING PREDICTS LESS WEIGHT LOSS IN A DIET- AND LIFE-STYLE-FOCUSED PREBARIATRIC SURGERY READINESS PROGRAM

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Approximately 113,000 adults in the US undergo bariatric surgery each year, and this procedure is considered the gold-standard treatment for severe obesity. However, up to 25% of patients fail to lose the expected amount of excess body-weight; nonadherence to postbariatric dietary recommendations is considered the primary contributor to weight loss failure. Presurgical disordered eating, particularly binge eating, has been implicated in weight regain after surgery. However, research on the potential impact of nondisordered individual differences in appetite and food motivation in this population is lacking. In this study, we used the adult eating behavior questionnaire (AEBQ), a measure of individual differences in appetitive traits, to explore the relationships of eight food approach/avoidance-related traits with body mass index (BMI) at the beginning of the program, and weight loss/gain during the 3-6-month presurgical program. 290 consecutively enrolled prebariatric patients responded to the AEBQ. Participants were 77% female and had an average age of 42.9 (SD= 12.1). Data collection is ongoing; to date 194 have either completed the program or left without undergoing surgery. First and last weights in the program, from both program completers and drop-outs, were used to calculate weight loss during the presurgical readiness program. Confirmatory factor analysis supported the 8-factor structure identified in a community sample (RMSEA = .05, CFI = .92). Food approach scales measured eating in response to hunger, external food cues, the taste of food, and negative emotions; food avoidance scales measured responsiveness to satiety, eating slowly, undereating in response to negative emotions, and refusal to try new foods/eat nonpreferred foods (picky eating). None of the AEBQ scales was associated with weight at program entry. When all eight subscales were regressed on weight change controlling for baseline BMI, the only independent predictor was picky eating: $B = 2.7$, $p = .01$. Bariatric candidates who are selective about food and/or reluctant to try new foods may fail to lose weight through bariatric diet and lifestyle changes before surgery; whether they become able to these changes after surgery is unknown. Whereas most presurgical readiness programs focus on appetitive traits associated with overeating, individual differences in dietary flexibility may be overlooked. These differences could impact surgical candidates' ability to increase their intake of fruits and vegetables and add novel foods, such as protein supplements, to their diets.

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RELATIONSHIPS AMONG DEMOGRAPHICS, STRESS AND DIETARY INTAKE BEHAVIORS AMONG LOW-INCOME OVERWEIGHT AND OBESE PREGNANT WOMEN

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Objectives. To examine relationships between demographics, stress, and dietary intakes of fat, fruit, and vegetable in low-income pregnant women.

Method. A cross-sectional pencil-and-paper survey was conducted of 353 low-income pregnant women who were overweight or obese before becoming pregnant.

Results. Women who were 35 years or older ($p = 0.006$), had a high school or less education ($p = 0.005$), or were unemployed ($p = 0.005$) were more likely to report high stress than younger women, those with at least some college education or those who were employed/homemakers. Compared to pregnant women who reported less stress, pregnant women who reported high stress were less likely to report high fruit intake (OR = 0.55, 95% CI 0.35–0.86) after adjusting for age, education, and employment status. There were no significant differences in fat and vegetable intakes between women with low and high stress.

Conclusions and implications. High stress was more prevalent among overweight or obese pregnant women who were older, had less education, or were unemployed. To help low-income overweight or obese pregnant women increase fruit intake, nutrition intervention or education may consider inclusion of stress management for those who perceive high level of stress.

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THE EFFECT OF NATURALNESS ON MAKING FOOD PRODUCTS HEALTHY AND TASTY

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This paper investigates the effect of naturalness on the association between taste and health, as short-term and long-term consequences of consuming food products. Consumers generally believe that unhealthy is tasty. This belief entails that receiving short-term gratification is accompanied with long-term costs. This paper suggests that naturalness can change this belief and brings both short-term and long-term gratifications.

This paper proposes that nature is associated with balanced and holistic characteristics. This association entails balanced long-term (health) and short-term (taste) consequences for natural products. This is the opposite of common belief of unhealthy=tasty. The results of experimental study show that natural products are generally perceived to be both healthy and tasty. These products have a lower difference between their long-term and short-term consequences. This paper suggests that an increase in balanced consequences is a mechanism for the impact of naturalness on product attractiveness.

One hundred and seventy participants took part in this study on the MTurk website. The participants were randomly assigned to either the natural or the unnatural condition. Each individual answered questions regarding two food products (carrots and chocolate chips cookies). In the unnatural condition, the food products were described as being produced by industrial methods or containing preservatives and additives. In the natural condition, the food products were described as produced using organic methods or not containing preservatives and additives. Participants evaluated healthiness, taste and overall attractiveness of the product using Likert scale.

Results of this study show that naturalness decrease the difference between health and taste as the long-term and short-term consequences of food products. Food products are healthy and tasty in natural condition. Moreover, the effect of naturalness on balanced consequences is larger in products with higher immediate benefits, i.e. chocolate chips. As products with immediate benefits have higher difference between their short-term and long-term consequences, naturalness brings higher benefits to them in comparison to products with non-immediate benefits that already enjoy relatively balanced consequences. This study demonstrates that food products become more attractive when they are introduced as being natural. Balanced consequences mediate the effect of naturalness on product attractiveness.

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WHO BRINGS HOME THE BACON? AN EXPLORATION OF GENDER IN HOUSEHOLD FOOD PURCHASES

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Food purchasing behavior is an understudied precursor to eating behavior. To date, studies investigating food purchasing have focused almost exclusively on women's purchasing patterns because they are more likely than men to be the primary grocery shopper in heterosexual households. However, it is important to also study purchases made by other adults in the household in order to gain complete picture of household food environments and to identify additional points of intervention for healthy eating.

Data for this analysis come from the Study of Household Purchasing Patterns, Eating, and Recreation (SHoPPER; NCT02073643). This study included a rigorous, standardized approach to collecting and validating food purchase receipts. The primary grocery shopper in each home was trained in the collection of itemized receipts, tagging receipts and purchased foods with color coded stickers, and recording all foods purchased and consumed. Purchases made by someone other than the primary grocery shopper were also recorded. Research assistants visited homes three times over a two week period and collected and verified food purchases. The nutritional content of all foods purchased was calculated using the Nutrition Data System for Research (NDSR) and the Healthy Eating Index-2010 (HEI-2010) was calculated for purchases. All household members' demographic information recorded and heights and weights were objectively measured.

Of the primary grocery shoppers who volunteered for the study (N = 204), 17.2% (n = 35) were men. An average of 1.8 ± 0.9 adults (M ± SD) and 0.7 ± 1.1 children lived in the 204 households assessed. During the study period, 19,172 individual food items were purchased. The majority of the purchases were made by the primary grocery shopper (86.0%). For purchases made by any adult in the household, 22.8% of purchases were made by men. Men made fewer of their purchases at traditional grocery stores (51.7%) than women (70.2%; p < 0.001) however the quality of foods purchased were similar (HEI-2010: Men 57.5 ± 16.1 vs. Women 59.3 ± 16.0, p = 0.43).

Although men in this sample made significantly fewer of the overall food purchases than women, the quality of the foods were similar. Because men are more likely to purchase foods outside of traditional grocery stores, interventions targeting healthy eating among men should focus on healthier options available in these alternative locations such as carryout restaurants and fast food venues.

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APPROACHES AND EFFECTIVENESS IN IMPLEMENTING THE EARLY CARE AND EDUCATION LEARNING COLLABORATIVE USING REAL-WORLD CONDITIONS

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Early care and education (ECE) programs are a key setting to implement strategies to improve policies and practices with regard to healthy eating and active living among young children. The National Early Care and Education Learning Collaboratives Project (ECELC) is a multi-state intervention across the United States (U.S) which is based on five strategies (self-assessment; in-person, peer-to-peer training; action planning and implementation; technical assistance; and reassessment). The ECELC has been assessed using pre and post data collected via the Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC) instrument. Results indicate that ECELC has been highly effective in implementing best practices for breastfeeding, nutrition, physical activity, and sedentary behaviors in ECE programs. However, the ECELC model is most resource intense of the models tested and therefore may not be easily spread and scaled to large numbers of ECE programs. This study compared and contrasted the full ECELC model to four alternate versions (training-only, technical assistance-only, online delivery of training, and toolkit-guided implementation of the five strategies) in an effort to test smaller, less resource-intensive forms of the model. Findings suggested that the Standard ECELC model is more effective (i.e., significant improvements from pre-assessment to post-assessment across all NAP SACC topic areas, ranging from a 10% increase in the area of Child Nutrition, which translates to about 4 more best practices on average, to a 14% increase in Infant & Child Physical Activity, which means about 3 more best practices on average) than training-only or technical assistance-only. However, adaptations to the delivery of these components (i.e., online delivery and toolkits that allow the ECELC to be implemented into existing programs and initiatives) may reduce the need for significant outside funding and may help foster and maintain sustainability of the program. Specific results will be shared during the presentation. The ECELC has been a catalyst for important changes to promote healthy eating and active living related policies and practices that may ultimately aid in childhood obesity prevention efforts throughout the U.S. While the Standard ECELC model is ultimately deemed to be the most effective, findings from the other three models described in this report show some promise for ability to implement the ECELC model into other existing frameworks.

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HEALTH UTILIZATION PATTERNS AND CARE COORDINATION: LESSONS LEARNED FROM MEDICAID CLAIMS-DATA RESEARCH IN LUNG BIOPSY CASES

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Health utilization patterns provide opportunities for care coordination: Lessons learned from Medicaid claims-data research in lung biopsy cases.

There is great potential to support care coordination by using Medicaid claims-data to identify high need and high cost patients (super-utilizers). Claims data can identify healthcare events such as inpatient (IP), outpatient (OP), and emergency department (ED) visits along with health provider information. Identifying specific needs of patients and gaps in health services is critical to connect patients to a network of health providers, specialists, and key community resources.

The purpose of this paper is to report strengths, limitations, challenges, and strategies in using Medicaid claims-data to understand issues related to healthcare utilization and mortality in lung cancer care.

We will review: validity and methodological issues; discuss strategies for claims-based identification of an initial lung cancer diagnosis using Current Procedural Terminology (CPT) and Classification of Diseases (ICD) 9/10 codes; IP, OP, and ED utilization; and examination of factors associated with utilization and mortality. Next we will discuss strategies for strengthening the potential and benefit of using Medicaid data-sets based on lessons learned.

Finally, we will discuss research, practice, and policy implications of working with Medicaid data to improve care coordination for this vulnerable, low-income population. Research is needed to examine healthcare utilization patterns with recommended evidence-based guidelines in cancer prevention, screening, treatment, and supportive care. Coordination of appropriate and effective interventions including social and behavioral needs are key to improve quality of care. Policy changes addressing the linking of Medicaid and other clinical data sources will support and extend these efforts, ensuring the most vulnerable populations receive effective care coordination.

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USING EVIDENCE TO DETERMINE PATIENT NAVIGATOR COMPETENCIES: A MIXED METHODS APPROACH

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Patient navigation is “a model of care coordination designed to reduce barriers to achieving positive health outcomes”. As an emerging field, a consensus on competencies for patient navigators has been elusive with most suggested competencies for those working along the cancer continuum and adhering to the Commission on Cancer guidelines. The remains a dearth of research on competencies for patient navigators across health conditions and different settings. The proposed presentation shares results from a mixed method study of patient navigator competencies. **The study triangulates findings from a Delphi process review of competencies, national survey of task domains, review of expert opinion, navigator focus group results, and analysis of PN competency literature. The combination of qualitative, quantitative, and ranking methodologies used provides the most comprehensive analysis of competencies for patient navigators to date.** We identify core competencies across the various sources as well as specialty competencies that are dependent on role, function, or setting of the patient navigator. The process and results provide direction for the training of patient navigator workforce that is unique from other roles including community health workers, promotoras de salud, and health educators. The establishment of core competencies and specialty competencies is an important step in the recognition of this growing field.

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COLLABORATION IN THE IMPLEMENTATION OF BEHAVIORAL HEALTHCARE DELIVERY INNOVATIONS: LESSONS FROM THE CHART INVESTMENT PROGRAM

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Background: Phase 2 of the Community Hospital Acceleration, Revitalization and Transformation (CHART) program invests \$60 million into 27 community hospitals to enhance their delivery of efficient, effective care and preparing them for a value-based payment environment. Part of the evaluation focused on the implementation of each community hospital's customized innovation to reduce readmissions or emergency department revisits among vulnerable patients.

Objective: To understand whether and how hospital stakeholders and community partners collaborated to implement programs at 14 Massachusetts community hospitals that implemented behavioral health innovations.

Research Design: Key informant interviews took place from September–December 2016 with 119 hospital management, staff, and community partners. Informed by the Promoting Action on Research Implementation (PARIHS) framework and the Levels of Systemic Collaboration model, a qualitative directed content analysis approach was used to identify data corresponding to three themes: collaboration, community partnerships, and implementation success. The reliability and validity of our coding frame was assessed through joint coding by four analysts on multiple transcripts. Each coded transcript was discussed in depth until consensus was reached. Following this process, six analysts independently coded between 30–40 transcripts. Data were checked and entered into NVivo software for organization and reporting.

Results/Evaluation: Hospital staff indicated that the development of enhanced care plans through the collaboration between external community partners and the hospital was an important factor in continuing care following a hospital visit and reducing avoidable future hospital use. Implementation strategies consisting of community outreach and regular multi-disciplinary meetings that involved post-discharge providers (e.g., Skilled Nursing Facilities, community-based providers, etc.) was viewed as critical to the successful implementation of behavioral healthcare innovations, including patient tracking, telepsychiatry, and a community resource engagement platform. Hospital staff indicated that changes in emergency department operations benefitted from having more streamlined processes and collaboration with social workers and community health workers.

Conclusion: The implementation of behavioral health innovations at CHART hospitals benefitted from having collaboration across hospital stakeholders, and the integration of community partners with the healthcare team.

Future Plans: Learnings from the CHART Investment Program will help hospital stakeholders and community partners implement behavioral health care management processes critical to the success of future health care delivery improvement initiatives, including the MassHealth Medicaid ACO program.

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COMPARING THE REACH OF AN EFFICACY TRIAL VS. AN EFFECTIVENESS TRIAL: WHO ARE WE REACHING?

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BACKGROUND: Diabetes prevention interventions targeting lifestyle behaviours have been shown to be efficacious in reducing Type 2 Diabetes (T2D) risk. Inclusion criteria for participation in such efficacy interventions has typically been highly controlled, resulting in interventions being delivered to a small, targeted sample. As such, the effectiveness of translating these programs to community-based settings has yielded inconsistent findings. Within Glasgow's RE-AIM framework, evaluating the composition and proportion of a population willing to participate in a program, *reach*, is critical for effective translation. Small Steps for Big Changes (SSBC) is a brief motivational interviewing-informed diabetes prevention program that has demonstrated efficacy when delivered in a university setting and has since been translated to a community YMCA.

PURPOSE: To compare the reach of the university-based (efficacy) and community-based (effectiveness) SSBC program utilizing the RE-AIM framework.

METHOD: The SSBC effectiveness study is run out of the YMCA in Kelowna, B.C. The efficacy study required more restrictive exclusion criteria than did the effectiveness study, however, the basic inclusion criteria for both included individuals aged 18–65 who were deemed at risk for developing T2D. All 5 dimensions of reach, in accordance to RE-AIM, including valid denominator, recruitment strategy, exclusion criteria, representativeness and qualitative measure for descriptive statistics will be used for this analyses.

RESULTS: The efficacy study employed a wider variety of recruitment strategies, whereas the effectiveness study had stronger community partnerships. In total, 235 were deemed ineligible for the efficacy study due to use of antidepressants, compared to 23 in the effectiveness study. Recruitment strategies evolved from print posters and media announcements for the efficacy trial, as compared to partnerships with the local health authority involving direct physician referral. With exclusion criteria being less stringent, 71.7% of the individuals enrolled in the effectiveness study were recruited through local health collaborations.

CONCLUSIONS: Preliminary reach evidence shows that collaborating with the local health authority for recruitment was an effective means to reach a more representative population. Although the SSBC effectiveness study is in the early stages there is strong potential to reach a larger population compared to the SSBC efficacy study.

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EXTENDING OUR REACH: PRELIMINARY RESULTS DISSEMINATING MEANING-CENTERED PSYCHOTHERAPY (MCP) ACROSS SETTINGS & DISCIPLINES

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Purpose: MCP is a brief, structured intervention for cancer patients, aimed at enhancing a sense of meaning in the face of illness. MCP Training (MCPT) is a 5-year program that aims to disseminate MCP to clinicians providing psychosocial or palliative care to people with advanced cancer using the RE-AIM framework (**R**each, **E**fficacy, **A**doption, **I**mplementation, and **M**aintenance) of implementation. The training is a 2-day intensive course comprised of interactive group exercises, lectures and small-group role plays with actors as patients. Trainees are assessed over a period of one year to determine the efficacy of MCPT.

Methods: Preliminary data from the applicant pool (n=309), the first 6 training cohorts (n=136), and 3-month follow up (T2) surveys (n=65) were analyzed. Trainees are assessed on several core competencies throughout the 2-day training, and provide feedback at the end of each day. Knowledge of MCP is assessed using a pre/post measure. Additionally, trainees are asked to complete follow-up surveys every 3 months to report implementation of MCP.

Results: 309 clinicians have applied to the MCPT program. Social workers (29.4%) and psychologists (31.1%) comprise two-thirds of applicants. The majority of applicants serve patients in academic medical centers (21.7%), comprehensive cancer centers (14.6%) or private practice (13.3%). 136 applicants have participated in the first 6 training sessions. At baseline, the majority of trainees (90.5%) self-report as new to or developing skills in MCP. Trainees improved their knowledge of MCP significantly ($t(132)=-1.99, p<0.001$) on a 10-question pre/post training assessment. 89.7% of trainees rate quality of materials highly, 4–5/5. Average trainee overall satisfaction score is 4.93/5. 47.8% of trainees completed T2 assessments, and 81.5% of those respondents report using MCP in their own clinical settings.

Conclusions: In the context of the RE-AIM model, MCPT is *reaching* the appropriate clinicians by discipline and clinical setting; it is *effective*, as most participants enter training with little MCP experience and increase their knowledge throughout the course; and it is *adopted* by 38.9% of trainees at T2. High quality of training is emphasized in trainee feedback ratings in the areas of training content and quality. Additional data is needed to identify barriers to the use of MCP and analyze MCP *implementation* and *maintenance* within this framework.

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FORECASTING OF WEST NILE EPIDEMICS USING GOOGLE TRENDS: US STATE-SPECIFIC SEARCH BEHAVIOR

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We extend a previously described method to forecast West Nile virus (WNV) cases, based on data obtained from Google Trends (GTs) and the CDC from 2015 to 2016. We examine the forecast accuracy of this method when applied to individual states in the USA. Previously, this method was used to forecast total WNV cases in the continental USA. Forecast accuracy is of importance to local health departments, as more precise forecasts of outbreaks can help allocate resources. Modeling was done using an autoregressive integrated moving average (ARIMA) model (0, 1, 3) including or excluding GTs data as additional regressors. Forecasting accuracy results indicate that ARIMA models using GTs data are more accurate than ARIMA models not using this data, but the location impacted this change in accuracy. Similarly, we find strong, but location dependent, correlations in many states between GTs and WNV outbreaks. ARIMA models regardless of GTs data inclusion were always much more accurate than the baseline time-series linear model. Washington, Colorado, Arizona, and New Jersey prediction models were improved significantly when GTs data was included. Differences in local population online responses to local WNV cases may be driven by different behaviors including alternative uses of social media networks or by external factors such as the availability of internet connection. Online search behaviors between states are variable and must be considered when used for forecasting WNV outbreaks. The practical application of this knowledge is that at-risk communities can be identified using real-time search data so interventions for decreasing vector exposure can be efficiently targeted.

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INTEGRATING QUALITY IMPROVEMENT INTO THE WORK-LIFE OF LIFESTYLE PROGRAM COORDINATORS: LEAP PROGRAM FIRST-YEAR RESULTS

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Background: Quality improvement (QI) activities that are integrated into everyday work-life is a building-block skill for organizations to transform into true learning health systems. It is also an approach by which programs can be incrementally improved to more closely align with evidence-based innovations. However, learning and applying quality improvement skills is challenging for clinicians who work within a busy clinical environment. The Learn. Engage. Act. Process. (LEAP) Program is a team-level intervention, designed to empower frontline staff to implement and enhance evidence-based programs by building QI skills within the context of significant constraints on time and resources. The aim of this study was to evaluate process outcomes from a large-scale, stepped-wedge, randomized control trial of LEAP. Participants were teams responsible for leading weight management programs.

Methods: LEAP is a 21-week structured program designed to help clinicians learn and apply QI skills to their own program through weekly hands-on participation. The LEAP curriculum is delivered via an online platform. Group and individual QI coaching is provided through video conferencing calls. LEAP draws from short video clips and other resources developed by the Institute for Healthcare Improvement and HarvardX and the LEAP team. LEAP was refined based on formative feedback from three pilot teams; a total of 20 teams from 20 different medical centers, comprising 109 individuals, participated in the pilot and in the first four cohorts of teams. Measures of self-assessed QI skills and local organizational readiness for implementing change (ORIC) were administered before and after participation in LEAP.

Findings: All participants agreed that though participating in LEAP was challenging to fit into their existing work demands, LEAP was feasible to complete. All reported significant improvements across six categories of QI skills (e.g., using run charts) before versus after participation in LEAP ($p<0.01$). Lack of time was the biggest challenge, amid pressures of fulfilling other clinical responsibilities but all team leaders were committed to continuing to apply their new QI skills with ongoing support. All teams defined aims and applied acquired knowledge and skills toward achieving their aim to improve a facet of their weight management program.

Conclusions: LEAP is a scalable program with potential to empower frontline staff to engage in QI within their sphere of influence, an important foundation for learning health systems. LEAP was successful in helping frontline teams gain QI skills even with significant resource constraints.

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SOCIAL-ECOLOGICAL OVERVIEW OF CHURCHES' PLANS FOR IMPLEMENTING HEALTHY ENVIRONMENT CHANGES

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Purpose: Churches can provide a number of opportunities to influence member and community health. Previous interventions in churches have focused on individual-level changes, commonly offering educational sessions and/or classes, with few using an ecological approach. This study describes program plans that churches developed after they were trained to implement a faith-based, physical activity (PA) and healthy eating (HE) intervention guided by Cohen's Structural Ecological Model of Health Behavior.

Methods: Churches (N=53) attended a one-day training on strategies for creating changes to support PA and HE. All church committees wrote and submitted a program plan for implementing changes according to four adapted structural factors of Cohen's Structural Ecologic Model: 1) programs, 2) opportunities, 3) social structures and policies (not required), and 4) cultural and media messages. Plans were analyzed and coded using nVivo v.11.

Results: Plans most frequently included changes addressing PA and HE through cultural and media messages (n=468) such as encouraging pastors to discuss PA and HE from the pulpit and sharing monthly bulletin inserts. Next, churches proposed changes increasing PA and HE opportunities (n=238) such as planning time to walk after worship service and serving more fruits and vegetables at events. Plans addressing programs for PA and HE (n=75) included ideas such as starting a walking program or providing a healthy cooking class. Finally, churches addressed social structures and policy changes (n=65). Policies commonly included requiring PA breaks in church meetings lasting longer than 30 minutes and serving fruits and water instead of sweets and soda during children's Sunday School.

Conclusions: Church committees trained using an ecological approach planned a variety of activities to promote and increase PA and HE behaviors relevant to their congregation. Future studies should continue to investigate the role and influence of pastors and leaders when making healthy changes and developing policies.

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CORRELATES OF SUN SAFE POLICY IMPLEMENTATION AMONG ELEMENTARY SCHOOLS

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In 2014, the U.S. Surgeon General issued a Call to Action to Prevent Skin Cancer, citing its high and increasing prevalence and cost. The Centers for Disease Control and Prevention and the Surgeon General identified sun safety in schools as a priority to reduce UV exposure and sunburns of children, with school district policy a key aspect of school-based efforts to prevent skin cancer. In this study, we explored the correlates of the implementation of sun safe practices, consistent with district board policy, among principals and teachers in public elementary schools. The sample included elementary school principals (N=118) and teachers (N=113) recruited from 40 California public school districts that had adopted Board Policy 5141.7 for sun safety and posted it online. Principals and teachers from the elementary schools reported on student sun protection policies and practices when surveyed between January 2014 and April 2016. Principals and teachers who were older (odds ratio[OR]=1.046, F=4.5, p<.04), were aware of the district board policy (OR=387.70, F=52.5, p<.0001), and could accurately recall elements of the district board policy (OR=3.5, F=50.7, p<.0001) were more likely to implement at least one school-level practice consistent with district board policy. These findings were replicated for the number of practices implemented consistent with California Senate Bill 1632 (Billy's Bill), which protects the right of students to apply sunscreen while at school without a physician note and to wear UV-protective clothing including hats on school grounds. Using the Billy's Bill outcome variable, older age (OR=1.07, F=6.1, p<.02), more years of work experience in education (OR=1.07, F=6.4, p<.02), and greater awareness (OR=98.31, F=33.41, p<.0001) and knowledge (OR=2.8, F=42.7, p<.0001) of district board policy were related to more practices implemented. The results imply that improved awareness of the existence and content of district board policy for sun safety may increase implementation of school skin cancer prevention. Districts need improved strategies for communicating these policies to principals and teachers who are responsible for implementing them to reduce UV exposure of children. Principals with greater experience might be recruited as key informants for those communications.

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DID THE APPROACH USED TO RECRUIT RURAL ADULTS INTO A BEHAVIORAL INTERVENTION IMPACT RECRUITMENT, ENROLLMENT, AND ENGAGEMENT?

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Unsuccessful recruitment efforts have negative implications for behavioral interventions, ranging from an increased use of resources to underpowered studies. Though the evidence for how to enhance recruitment is growing, there is still much more to understand. This study seeks to expand this evidence by describing how recruitment, enrollment, and engagement indicators varied by general recruitment approach during SIP^{smart}ER's dissemination and implementation trial. SIP^{smart}ER was designed to meet the needs of low health literate individuals living in rural Appalachia. Recruitment and enrollment indicators include if a cohort delivered SIP^{smart}ER, number of screeners collected, rates of eligible individuals screened and enrolled, and health literacy of those recruited and enrolled. Engagement indicators include rates of activity completion and retention at 6-month assessment. This secondary analysis uses recruitment and implementation data, including field notes, number of surveys collected, contact logs, SSB intake, and attendance logs. Three general approaches taken to recruit cohorts were identified: community-wide (open), intact group with passive support from a group leader during recruitment and engagement (intact), and intact group with active support during recruitment and engagement (supported-intact). Data were analyzed using Chi Square tests and ANOVAs. Nineteen cohorts were approached using open (26%, n=4), intact (42%, n=8), and supported-intact (32%, n=6) approaches. Eleven (58%) enrolled enough participants to deliver SIP^{smart}ER; rates did not vary by approach. On average, more screeners were collected in open cohorts compared to intact and supported-intact cohorts (97.8 vs 43.6 and 14.5, $P=.043$). Compared to supported-intact cohorts, participants in open and intact cohorts were less likely to be eligible (84% vs 60% and 66%, $PPP=.157$), but enrolled participants in intact and supported-intact cohorts had poorer health literacy scores than those in open cohorts (5.6 and 6.3 vs. 3.5, $P=.001$). Among the five cohorts that completed SIP^{smart}ER by the summer of 2017, participants in supported-intact cohorts had higher rates of participation in intervention activities than those in open and intact cohorts (81% vs 48% and 47%, $P=.002$). Participants in intact and supported-intact cohorts were more likely to complete the 6-month assessment than those in open cohorts (100% and 92% vs 64%, $P=.012$). Though findings should be interpreted cautiously due to the small number of cohorts, this study provides evidence that targeting intact groups that have the active support of group leaders for recruitment and implementation activities can have a positive impact on recruitment, enrollment, and engagement.

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EXTENDING THE REACH OF DPP INTERVENTIONS FOR WOMEN WITH PREDIABETES: TAILORING TO ENHANCE TRANSLATION IN PRIMARY CARE

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Background: Prediabetes, which now affects more than one in three US adults, increases the risk of incident diabetes for a significant portion of the population. Type 2 diabetes is a common disease, already affecting 25% of Veterans, and is associated with significant morbidity and mortality. Persistent gender disparities in quality of care for type 2 diabetes and cardiovascular (CV) risk underscore the importance of innovative approaches to target and promote diabetes prevention among women.

Methods: Women Veterans with prediabetes were invited to participate in a 12-month tailored, evidence-based intensive lifestyle intervention referred to as the diabetes prevention program (DPP). Women who met eligibility criteria were offered the choice of either a tailored peer-led, in-person DPP or an online DPP intervention. Patient and implementation outcomes were assessed using patient and provider semi-structured interviews, patient surveys and DPP participation and weight data.

Results: After screening 874 women Veterans, 541(62%) met preliminary eligibility criteria and 302 (56%) were reached by phone to confirm eligibility. Among those reached, N=216 (72%) expressed interest in DPP; 24% (N=51) chose in-person, peer-led DPP; 74% (N=160) chose online DPP and 2% (N=5) were undecided. At baseline, about 30% were aware of their previously documented prediabetes diagnosis and only 16% had previously participated in a lifestyle change program. Participation and adherence was higher with online as compared to in-person DPP (56% of online participants vs. 25% of in-person participants completed ≥ 9 sessions/modules). A total of 38 interviews were conducted (N=18 early implementation and N=20 post implementation). DPP content was well received regardless of modality but participants and providers valued having a choice between DPP modalities and agreed that offering gender-specific groups may help encourage participation.

Conclusions: Increasing prediabetes awareness and tailoring DPP intervention delivery to better meet the needs and preferences of high-risk sub-groups may help extend the reach of ongoing national efforts to prevent type 2 diabetes.

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IMPLEMENTATION CHALLENGES IN INTEGRATING A PERMANENT HEALTH SURVEY AND REFERRAL SYSTEM IN THE EMERGENCY DEPARTMENT

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The Computerized Health Survey (CHS) is an electronic survey designed to screen for mental health (MH) and substance use disorders (SUD) and provide referral resources based on appropriate level of care needed by the patient. The survey is patient-administered in the Emergency Department (ED) on tablet PCs installed in the treatment room. The CHS consists of brief screeners that, when positive, expand to full assessments. The screening portion of the CHS, on average, takes 4 minutes to complete with an additional 10 minutes if the patient completes the entire survey. Results from the survey are integrated into the electronic health record where ED physicians can view and save them to the chart and discuss with patients.

The CHS faced many barriers in development and implementation. Top developmental challenges included: a faulty patient wristband scanner, server communication issues, and reporting errors, which were resolved by replacing the scanner with a patient-entered name/birthdate feature, server migration, and a comprehensive review of software specifications. Delays in software updating and testing and staff concerns with hardware hindered installation into treatment rooms, prolonging full implementation. Hospital staff buy-in was particularly challenging, in part because of the volatility and stress of the ED environment. Changes in nursing staff's routine needed to be communicated well and repeatedly in order for nurses to take initiative. This barrier was addressed with informational placards, attending daily huddles multiple times per day, and demonstrating to nurses the simplicity of introducing the survey.

Since March 2016, research assistants and hospital staff have approached 2517 patients to initiate the survey. One thousand six hundred and eleven (64.0%) patients took the survey, and 563 (34.9%) screened positive, either solely or in combination, for SUD, depression, anxiety, and PTSD. Nine hundred two (35.8%) patients did not complete the CHS for reasons expected in an ED setting including: disinterest, too ill/medical interventions, and discharged during interaction. Language barriers, cognitive, visual, and auditory impairments/disabilities, technological deficits, and illiteracy prevented patients from proceeding with the survey. Our goal with full implementation of the CHS is to reach the 8000 patients who annually come into the ED with a SUD or MH issue by screening all patients at every visit.

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INTEGRATION OF AN ENHANCED PSYCHOSOCIAL EVALUATION PROCESS FOR KIDNEY TRANSPLANT CANDIDATES: COUNTDOWN TO TRANSPLANT CLINIC

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Background: There are approximately 100,000 patients listed and awaiting kidney transplantation with a current national average wait for a deceased donor of 3 to 5 years. Per guidelines, patients routinely undergo yearly medical re-evaluation for continued listing. However, there is a lack of standardization of continued psychosocial evaluations. As issues can (re)emerge over time, efforts to identify and reduce psychosocial risks prior to transplant have potential to improve survival and clinic outcomes. Integration of behavioral assessment into routine tertiary care is an important area of research and development.

Purpose: To describe the development and integration of an educational and evaluative clinic for listed kidney transplant patients.

Methods: The multidisciplinary kidney transplant team (including psychologists, social workers, nurses, physicians, nutritionists, and patient lifestyle coaches) collaborated to develop and integrate a clinic aimed at identifying and ameliorating risk factors for negative outcomes in patients listed and likely to receive a transplant offer in the near future (patients high on the list at a large, Midwestern transplant center). The clinic included an enhanced educational session focused on preparedness for transplant and lifestyle changes after surgery with evaluations by psychology, social work, and nephrology. Patients were required to bring two of their supports to verify adequate support for transplant.

Results: From November 2016-August 2017, 89 patients attended the clinic. Following participation, 19 patients were placed on hold, of which five holds were due in part to psychosocial factors including active substance abuse or lack of adequate support. Recommendations from the psychological assessment included; engaging in psychotherapy to address symptoms of adjustment, anxiety, or depressive disorder (n 9), mobilization of social supports (n 6), cease substance use (n 1). Strategies and resources for all recommendations were provided to the patient and communicated back to the primary team.

Conclusion: Integration of an educational and re-evaluative clinic into tertiary care can benefit patients, supports, and transplant staff by providing a way to collaborate in the identification and management of psychosocial risk factors in patients approaching transplant.

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LEVERAGING PHYSICAL ACTIVITY TO PROMOTE MENTAL HEALTH IN AT RISK ADOLESCENTS: LESSONS LEARNED FROM 2 ITERATIONS OF LEADERS @ PLAY

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Early adolescence is characterized by sharp decreases in physical activity and out of school time (OST) programs. Nationally, 20% of middle school students are unsupervised after school, a time period when they are vulnerable to risky behaviors (e.g., sexual experimentation; drug and alcohol use; gang involvement). Leaders @ Play was developed through university-community partnership as an OST program to prepare at-risk adolescents to serve as Jr. Counselors at neighborhood parks. It focused on instilling common elements of adolescent prevention programs (i.e., effective communication, problem solving, and emotion regulation) through didactic and recreation activities, and was offered at 3 parks (N = 46 middle-school youth, 100% African-American, 100% low-income, 59% female, M = 13.09 years), 90-min/day, 2 days/week, for 10 weeks (Frazier et al., 2014). The original iteration was designed to be co-facilitated by a Physical Instructor and Social Work Intern but both co-facilitation (park staff only co-facilitated 51% of sessions) and attendance (M = 6.3 youth/session) emerged as challenges. Following the Clinic/Community Intervention Development Model (Burns & Hoagwood, 2002) we engaged in an iterative process of continuing refinement and pilot testing of the protocol to ensure that the model reflected the evolving capacity and needs of the setting. After analysis and extensive consultation with our community partner, a second iteration, Leaders @ Play 2.0, was implemented as a 1–2 hour biweekly component of a 6-week Teen Leadership Summer Camp at 5 parks (N=38 middle-school youth, 31% Hispanic, 26% African-American, 55% low-income, 43% female, M=13.2 years-old). Leaders @ Play 2.0 adapted the original intervention by simplifying the agenda and emphasizing sport and physical activity, which aligned better with park strengths. Restrictions on co-facilitator eligibility were removed to improve feasibility and scalability, and Park Recreation Leaders and University staff without extensive mental health training co-facilitated sessions with weekly supervision meetings with investigators. Physical activities were designed to directly challenge identified social skills, small group discussions were systematically conducted prior to and following each activity, and staff were trained to capitalize on teachable moments by Modeling, Observing, Reinforcing, and Encouraging (MORE) skills. Implementation was successful with a 94% park co-facilitation rate, M=9.0 youth attending each session, youth engagement from 90–100% across activities, and 81% of agenda items completed. Findings suggest that ongoing refinement of an intervention based on stakeholder feedback and data, and leveraging of existing resources, can facilitate implementation of OST physical activity programming to simultaneously promote physical and mental health among at-risk adolescents.

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MOTIVATIONAL INTERVIEWING IMPLEMENTATION TO IMPROVE LINKAGE TO CARE FOR YOUTH LIVING WITH HIV: THE MINORITY AIDS INITIATIVE

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Implementation fidelity is critical for achieving the benefits of evidence based interventions; however, it remains unclear how to implement evidence based practices in HIV settings utilizing paraprofessionals to deliver comprehensive services to youth living with HIV. The goal of this study was to evaluate paraprofessionals implementation fidelity following randomization to a motivational interviewing intervention to determine: 1) implementation fidelity trajectories across time, 2) optimal intervention dosing based on educators' implementation trajectories, and 3) educators' perceived barriers and facilitators for implementation. Longitudinal data were collected from 17 HIV health service organizations. Implementation fidelity was assessed at baseline and up to 15 times over two years. Random coefficient models were utilized to examine time trajectories of motivational interviewing fidelity scores and the impact of the intervention on motivational interviewing trajectories. Semi-structured interviews were conducted to determine barriers and facilitators for implementation. Motivational interviewing competency scores of the intervention group significantly increased; however, competency scores of the control group significantly decreased over time. Further analysis of the intervention group demonstrated a significant quadratic effect. Competency significantly increased during the first three months after training and then plateaued for the duration of the study (24 months). High rates of implementation adherence were evidenced. Qualitative interviews revealed insufficient time and competing priorities as perceived barriers. Intensive training and integration into routine practices were perceived facilitators. Findings support teaching paraprofessional health educators behavior change techniques to enhance linkage to care services offered to youth in HIV clinical settings. Attunement to competing demands and priorities facing paraprofessionals is critical for considering intervention implementation practices; however, continued education and emphasis on the benefits of implementation may help to overcome perceived implementation barriers. Finally, the results suggest optimization of intervention dosing occurred after three months. Future studies should determine whether more tailored training after the first three months leads to continued growth in individual implementation fidelity over time.

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MOTIVATIONAL INTERVIEWING SIMULATOR: AN EXPERIENTIAL ONLINE TRAINING TOOL

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Motivational Interviewing (MI) is a widely researched evidence-based practice that uses collaborative conversation to support and guide people through a process of behavior change. When used with fidelity, MI has proven effective with a range of populations with outcomes of decreased substance use, increased medication adherence, reduced psychiatric symptoms, improved housing stability, and reduced high-risk sex and drug-related behaviors.

MI training typically requires intensive two-day onsite workshops. A decline in skills and knowledge following onsite training is well documented, and opportunities and funding for follow-up learning are limited. A lag time in adopting technological innovations for professional development slows the translation of research to practice, leaving providers ill-equipped to provide the best quality care.

With a Small Business Innovation Research (SBIR) Phase II grant from the National Institute of Mental Health, the Center for Social Innovation (C4) developed and evaluated the *Motivational Interviewing Simulator: An Experiential Online Training Tool*. The “*Sim*” brings together MI training approaches with online simulation technology to guide users through case-based scenarios that strengthen and reinforce MI skills. Learners play alone or with others, respond to storylines and characters with MI skills, and receive expert feedback.

C4 recruited 180 practitioners from 20 programs working with individuals living in supportive housing (many of whom have histories of mental illness, drug and alcohol addiction, and homelessness) to test the *Sim*. After receiving in-person MI training, programs were randomized into one of three conditions: 1) MI Sim; 2) eBook (a passive online version of MI information); and 3) no ongoing support. Measures of MI confidence, knowledge, and application of skills were collected at four time points. Assessment interviews were conducted at two time points using the Motivational Interviewing Treatment Integrity code. Semi-structured interviews and focus groups were conducted with clients, administrators, and practitioners. Client-level data provided insight on clinical outcomes. Findings from this study will be illustrated and discussed within the context of the human service training landscape.

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PROMOTING PROGRAMS FOR DIABETES PREVENTION: A RANDOMIZED TRIAL TO DESIGN THEORY-BASED OUTREACH STRATEGIES

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Two-fifths of Americans may develop diabetes, yet high-risk patients may dismiss outreach promoting preventive programs. Novel strategies are therefore needed to increase patients' uptake of preventive programs in health system settings. Self-affirmation, or writing about personal values, can minimize defensive avoidance of health-promoting information; however, implementation in health systems is scarce. Among women at high risk for type 2 diabetes in an integrated healthcare delivery system, we conducted 1) a mixed methods study to embed streamlined affirmations, without the typical writing component, in outreach messages promoting preventive programs (2015); and 2) a parallel three-group RCT comparing the streamlined affirmations to an attention-only control group (2016). In the trial ($N = 237$; 64% racial/ethnic minority), participants viewed an outreach message preceded by either a) a values affirmation, i.e., a two-sentence prompt encouraging reflection on any personal value; b) a parenting affirmation, i.e., a two-sentence prompt encouraging reflection on values related to caregiving; or c) no affirmation (control). Compared to control, neither affirmation increased self-integrity, a measure of the degree to which participants were affirmed. However, the values affirmation increased interest in prevention (68.0% vs. 51.3%; adjusted odds ratio [AOR], 95% CI: 2.1, 1.1–4.0), a composite signifying a positive response on ≥ 2 of 3 individual indicators: information seeking about diabetes prevention (whether to receive a National Diabetes Education Program website link; 73.4% vs. 59.0%; AOR 2.0, 1.0–3.9); information seeking about a health system-based lifestyle program (whether to receive a link; 70.9% vs. 59.0%; AOR 1.7, 0.9–3.4); and intention to join a program (30.4% vs. 25.6%; AOR 1.4, 0.7–2.9). Results indicate that self-affirmation can be adapted for large-scale implementation. Despite limited observed impact on self-integrity, a streamlined values affirmation may promote preventive programs among women at high risk for type 2 diabetes.

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THE ROLE OF STAKEHOLDER BUY-IN AND CHAMPIONS IN IMPLEMENTING A COMPUTERIZED HEALTH SURVEY IN THE EMERGENCY DEPARTMENT

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Smartphone and tablet PC technology are becoming common tools to improve patient care in many healthcare settings. At the University of Massachusetts Medical School, we have installed tablet PCs equipped with a computerized health survey (CHS), internet access, and educational materials about common behavioral health issues into all Emergency Department (ED) treatment rooms. The goal of the CHS is to improve patient care through medical and behavioral health screening. The CHS is designed to be self-sufficient and sustained through minimal effort as part of the nursing staff's patient care routine. This minor change in staff routine required significant stakeholder buy-in for implementation success.

To increase stakeholder buy-in of the CHS, ED physicians and nurses were actively involved in the planning process of survey items, appearance of results in the chart, and tablet installation. Additionally, ED staff were educated at monthly meetings about the goals of CHS installation for 5 months prior to tablet installation. At these meetings, a champion was identified for each hospital shift. Each champion was sent a notification email the week before tablets were ready for use and was responsible for distribution of the email to the rest of the staff. Instructions cards on how to open the survey and contact information for any questions or problems encountered were given to all champions.

To ease the burden of change to staff routine, we utilized a 3-phase rollout to implement the survey in the ED. Phase 1 lasted 1 month and started in a smaller, 12-hour, 11-room treatment area, which allowed us to contain our patient population, while utilizing the high-turnover rate. Phase 2 lasted 1 month and consisted of a 24-hour, 9-room treatment area, which allowed us to observe and address barriers to implementation during after-hour shifts. Phase 3 expanded implementation to a 24-hour, 30-room treatment area, completing tablet installation in the entire ED.

However, the implementation of these devices into the ED posed both unexpected and expected challenges, with stakeholder buy-in posing one of the most pressing, ongoing problems. Problems we encountered that affected continued stakeholder buy-in were internet connectivity, survey results not correctly pushing to medical platforms, and patients stealing tablets. Nursing huddles served as a great medium for communication between staff members, provided an opportunity to present weekly and monthly statistics, and helped identify additional champions. Preliminary data suggests that attending nursing huddles increased survey completion rates by 13%.

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WHAT WORKS IN CORRECTIONS: FRONT-LINE INSIGHTS ON COMPUTER-BASED TRAINING

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The prison population is aging at a rapid rate and is expected to continue to do so into the foreseeable future. As a result, United States prisons are facing increased demands in caring for aged, chronically ill, and dying inmates. Despite advances in the free world, best practices for managing geriatric issues and life-limiting or terminal illness have not been adapted for use in corrections settings. Implementing a training program addressing the health issues related to this population could mitigate legal risks and enhance care; however, the paramount focus on security makes technological advances available in the free world inaccessible inside prison walls. Lessons learned from prior development, implementation, and evaluation research targeted at enhancing care for the aged and dying in prison led to the development of a media-rich interactive computer-based learning prototype, Enhancing Care of the Aged and Dying in Prison (ECAD-P). ECAD-P contains six modules that address end-of-life and geriatric care issues in prisons. This aim of the project focused on a small-scale evaluation of ECAD-P. Specifically, in-person usability testing was conducted at one state department of corrections and one large city jail. Participants (n=24) evaluated the user interface, ease of use, and perceived barriers of the prototype. Findings from usability testing will guide design and development decisions related to user preferences, optimizing learning experiences, and preparing for implementation. A summary evaluation of the computer-based prototype training includes the participants' impressions regarding the user interface (i.e., aesthetics) of the computer-based training modules, beliefs about ease of use of the computer-based training modules, and perceived barriers regarding use of the computer-based training modules. Findings will be used to refine the computer-based training program for large-scale usability testing targeting 12 prisons and jails across the United States. Lessons learned from this usability study and the larger scale usability study will inform future dissemination of the product. The intent of this educational product is to extend the reach to promote quality of health and health equity, as well as narrow the gap in health disparities experienced by a group that have often been described as "the least among us".

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USING VOICES OF COMMUNITY STAKEHOLDERS TO EXTEND THE REACH OF A BEHAVIORAL MEDICINE INTERVENTION FOR BLACK WOMEN LIVING WITH HIV

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Background: A limit to many behavioral medicine interventions is that they are developed without the input of community stakeholders who are knowledgeable about the issues that communities face, which can potentially limit their acceptability. The insights of communities stakeholders may also help to extend the reach of behavioral medicine approaches to communities in need. Community stakeholders with expertise in serving and advocating for Black women living with HIV (BWLWH) were interviewed to inform the development of STEP-AD (Striving Towards Empowerment and Medication Adherence), a behavioral medicine intervention for Black women living with HIV to improve medication nonadherence and address psychosocial factors (i.e. abuse/trauma histories, racial discrimination, HIV stigma/discrimination, and prescribed traditional gender roles) that have been associated with medication nonadherence.

Method: Fifteen community stakeholders residing in the Boston area were interviewed about factors impacting the lives and health of BWLWH and strategies that may be beneficial for behavioral medicine research/interventions. Semi-structured qualitative interviews were conducted with each community stakeholder and audio-recorded. Audios were transcribed in Microsoft word verbatim and coded using grounded theory.

Results: Community stakeholders noted several common insights on how to best reach and serve BWLWH including – genuine partnerships between community members and organizations/research institutions; addressing trauma and violence against women; providing mental health services in a manner that is de-stigmatizing, affirming, safe, and integrated with other care; raising awareness about the root cause of HIV-related health disparities (e.g. poverty, racism); and providing funding/resources to offset structural barriers (e.g. finance). Stakeholders also shared helpful and unhelpful ways that BWLWH cope with HIV stigma/discrimination (e.g. owning one's status vs. nondisclosure), racial discrimination (e.g. speaking up/advocating vs. silencing), gender roles (practicing self-care vs. sacrificing for others), and trauma (e.g. speaking their truth vs. silencing).

Conclusion: Qualitative insights from community stakeholders revealed that extending the reach of behavioral medicine research (such as STEP-AD) for black women living with HIV requires strong community partnerships, addressing violence/trauma, having validating settings, staff, and approaches, and knowing the impact of structural factors such as poverty and racism.

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A PROSPECTIVE COHORT STUDY OF PEDIATRIC HIV DISCLOSURE AND RESILIENCE IN ZIMBABWE

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We recruited a population representative sample of 372 children ages 9–15 on ART (antiretroviral therapy) or pre-ART at HIV clinics in two rural districts in Zimbabwe. During a baseline survey, caregivers were asked about what, if anything, their child knows about his or her HIV status. Caregivers reported on their worries about disclosing HIV to their child and how their child might react to the disclosure. Caregivers also completed the Patient Health Questionnaire-9, Strengths and Difficulties Questionnaire, and a measure of family relationship quality. We attempted to follow-up with the subset of 123 caregivers of non-disclosed children at baseline. In follow-up surveys, we also assessed medication adherence. We compared pre- and post-disclosure outcomes. 249 children (66.9%) knew their HIV status at baseline. Caregivers of the 123 non-disclosed children were contacted at 6 and 12 months. 55.3% of these children learned their HIV status within 1 year of the baseline survey. Caregivers overestimate their child's negative reaction to learning their HIV status. Using data on time since disclosure, we find that by 5-months post-disclosure, outcome levels are indistinguishable between disclosed and non-disclosed children. Children, caregivers, and families are more resilient following pediatric HIV disclosure than caregivers often suspect. Disclosure support interventions should consider addressing caregiver fears and worries to increase caregiver readiness and efficacy to disclose.

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COMORBID HIV AND MENTAL HEALTH CONCERNS: THE ROLE OF BEHAVIORAL MEDICINE IN PATIENT OUTCOMES

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According to the CDC, more than 1.2 million people in the US are living with HIV (PLWH), 40% of PLWH are in medical care and only 30% of PLWH have achieved viral suppression. It has been established that by receiving HIV-specific care, PLWH greatly reduce the likelihood of transmitting the virus as well as increase their total life expectancy and quality of life. It is noted that HIV and anxiety disorders often co-occur, and psychosocial issues (e.g., depression, sleep, memory) frequently serve as barriers to treatment adherence and health service engagement, as well as impact immunological response and mortality. Due to these factors, increased attention has been placed on the importance of providing a multidisciplinary approach to treatment. The purpose of the current study was to determine the number of HIV patients presenting with comorbid mental health concerns as well as review the contribution of Behavioral Medicine services to improved outcomes in an urban outpatient HIV Early Intervention Program (EIP). The EIP has an annual patient census of over 900 patients and utilizes a multidisciplinary approach to medical care, providing screenings, case management, and annual mental health assessments (MHA). Importantly, the EIP predominantly serves minorities and patients of lower SES (i.e., 44% Hispanic/Latino, 37% African American, and 17% White; 76% at or below federal poverty level) and has attained an 89% viral load suppression rate amongst its patients. Since 2015, 675 subjects were evaluated by Behavioral Medicine clinicians with an MHA. Subjects ranged in age from 18–87 years (Mean = 48). Results revealed that 57% of patients endorsed symptoms of sleep and eating concerns, 43% depression, 40% anxiety, 40% trauma, 30% substance use, 23% memory difficulty, and 8% mania. Ninety-three patients completed a follow-up MHA. Of those who endorsed any initial MHA symptoms (n=85), 22% of patients reported decreases in anxiety, 13% reported decreases in sleep/appetite difficulties, and 8% reported decreases in manic symptoms during their follow-up annual assessment. However, individuals presenting with depression, trauma, substance use, and memory difficulties showed no difference or worsening in their annual scores. Results indicate the importance and need for integrated Behavioral Medicine to regularly provide evidenced-based approaches to treatment for behavioral health risk factors, to provide health-focused education, and to complete cognitive assessments and intervention for PLWH. Recommendations for improvement in assessment and service delivery for this population will be offered.

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DSM-5 SLEEP DISORDERS AND EMOTIONAL SYMPTOMS IN A PUBLIC HEALTH CLINIC SAMPLE OF PEOPLE LIVING WITH HIV/AIDS

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Introduction: Sleep problems are a well-known comorbidity of HIV/AIDS and can contribute to existing mental, emotional, and immune health vulnerability. However, less is known about the presence of clinical sleep disorders in this population.

Methods: A public health clinic sample of PLWHA from traditionally underserved communities, living in Miami, an urban city with high HIV prevalence and incidence (n=69; 75.4% Black, 11.6% Hispanic, 46.4% women, 21.6% sexual minority, mean age = 50.97, SD=9.09), were recruited for an observational behavioral sleep study. Participants answered questions about their background, mental and emotional functioning, and sleep. The Duke Structured Clinical Interview for DSM-5 Sleep Diagnoses was administered to assess clinical sleep disorders.

Results: Based on DSM-5 clinical diagnostic criteria, n=57 (82.6%) met for a current sleep disorder. The majority (72.5%) met criteria for insomnia disorder. Further, 34.8% were at elevated risk for sleep apnea, 21.7% had excessive daytime sleepiness, 13.0% met criteria for restless legs syndrome, and 2.9% were at elevated risk for narcolepsy. Of the total sample, 70% reported a significant mental health history (diagnosis and/or treatment). Approximately half of the sample reported current (within the past month) depression (52.2%) and/or anxiety (47.8%).

Discussion: Our results demonstrate high numbers of clinical sleep disorders and emotional symptoms in a public health clinic sample of people living with HIV/AIDS. Given the associations between sleep and mental health issues and the well-established link between mental health and HIV medication adherence in PLWHA, our findings warrant increased attention to sleep problems in PLWHA to improve health outcomes.

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EXAMINING CHALLENGING PATIENTS WITH HIV IN ARGENTINA: COPA2

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Objectives: Effective HIV treatment results in suppressed HIV viral load and improved health status. In Argentina, HIV treatment is offered to all persons at no cost. Challenging HIV-infected patients, those not retained in treatment, are an important focus of positive tertiary prevention. This preliminary study explored the relative contribution of self-efficacy, motivation, and patient-provider relationship satisfaction to engagement, treatment adherence and health status among those lost to care in Argentina.

Methods: Participants (N = 236) were identified from 6 clinics in urban centers in Argentina. Men, women and transgender adults not retained in care (no physician visit in 12 months or 3 missed pharmacy pick-ups in 6 months and having detectable viral load following 6 months of antiretroviral (ARV) prescription) were enrolled. Self-reported adherence to ARVs, adherence to pharmacy pickup, HIV viral load, and psychosocial information was assessed.

Results: Participants' mean age was 39.36 (SD=10.94) with an average income of US\$560 per month; half (53.0) were men; 56% were attending public clinics (n = 4 clinics). Participants had been diagnosed a mean of 12.44 years (SD = 7.15), had been prescribed ARVs a mean of 10.61 years (SD = 6.73), and had a mean log viral load of 4.49 (SD = 0.87). One third (36%) self-reported taking no medication in the last month, clinic data indicated only 7% filled 3 pharmacy prescriptions in the last 3 months. One third (33%) reported depression, 19% were using drugs and 38% were abusing alcohol. Using linear regression, patient-provider relationship satisfaction was associated with viral load ($b=-0.979$, $p=0.045$); clinic type (private vs public) was associated with viral load ($b=-0.182$, $p=0.208$, $p < 0.001$). Greater self-efficacy was associated with better self-reported adherence ($b= 0.449$, $p=0.002$). There was no relationship between depression, alcohol or drug abuse, and adherence or health status.

Conclusions: Preliminary results suggest that the patient-provider relationship may play an important role in health status. Continuing contact with patients lost to care may stimulate self-efficacy and adherence, and strategies from the private setting used to maintain patient contact should be explored for their applicability in the public health setting.

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EXTENDING THE REACH OF BIOMEDICAL HIV PREVENTION TO GAY COUPLES: A QUALITATIVE STUDY OF MOTIVATIONS AND CONCERNS

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Background: HIV rates continue to disproportionately affect men who have sex with men (MSM). Recent work has shown that young MSM (18–29) are uniquely vulnerable to HIV infection, and that main partnerships account for more than half of new HIV infections. Research suggests higher rates of infection among main partnerships are linked to low perceptions of HIV-risk and lack of motivational prevention messaging. Despite the importance of HIV prevention for young MSM in relationships, few studies have examined motivations for and barriers to PrEP uptake among these partnered men.

Methods: Data were gathered from qualitative interviews conducted during the formative phase of the Couples Health Project, whose goal is to develop a brief MI-based intervention to reduce drug use and HIV risk in same-sex male couples. The sample included 10 couples where, at least one person was HIV-negative and between the ages of 18 and 29. Recordings were transcribed and coded for references to perceived barriers of PrEP and PEP (i.e. stigma, medical-related costs); perceived benefits of PrEP and PEP (i.e. health promoting, increase relationship functioning); and dyadic motivations to enhance communication around PrEP and PEP.

Results: A majority (90%) of couples ascribed to the notion that PrEP and PEP are viable sexual health promotion strategies. Despite their acceptability, 70% of couples stated that initiating a conversation regarding PrEP and PEP may evoke concerns around relationship functioning including potential trust issues and risk of infidelity. To combat potential negative relationship outcomes, 30% of couples identified the importance of being honest and supportive of each other. Additionally, 80% of couples indicated how PrEP-related stigma discourages individuals from accessing the medication. All couples stated that a supportive social network and expansion of PrEP and PEP-based knowledge would increase medication uptake among gay male couples.

Conclusions: Tailoring biomedical HIV-prevention public health campaigns that address the unique barriers identified by partnered gay men are essential. Such campaign messages must take a relationship-positive stance. Implying that PrEP/PEP are applicable when men cannot trust their partners may diminish uptake among partnered men. Instead, emphasizing anxiety reduction and related improvements in dyadic functioning, and framing biomedical prevention as “routine” health-care may reduce relational-barriers.

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GENDER MODERATES AN INDIRECT PATHWAY FROM DEPRESSION TO FUTURE HIV VIRAL SUPPRESSION AMONG PLWH

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Background: Reduced HIV incidence and improved individual health require lifelong antiretroviral therapy (ART) adherence ($\geq 95\%$) to maintain virologic suppression. Depression is a pervasive barrier to ART adherence among persons living with HIV (PLWH). PLWH who are depressed are less likely to be virally suppressed over time. While HIV-positive women are twice as likely to be depressed as HIV-positive men, less is known about whether gender differentially affects the process through which depression impacts viral suppression among PLWH. Moderated mediation allows for the analysis of both how and for whom an effect occurs.

Purpose: Moderated mediation analysis was used to test the hypotheses that depression (IV) affects future viral suppression (DV) through ART adherence (Mediator) and that the path between depression and ART adherence differs by gender (Moderator).

Method: We recruited adult PLWH accessing HIV care in the Bronx, NY (N=101) who completed baseline measures on gender (M=1, W=0), depressive symptoms (continuous; Range 0–10) and ART adherence (dichotomous; 1=

Results: The average number of depressive symptoms was 3.74 (SD=2.27). The sample was 52% men, 63% non-adherent to ART, and 46% had a detectable viral load at 12 months. Overall, there was a marginally significant direct effect with lower baseline depression predicting a detectable viral load (i.e., not being virally suppressed) at 12 months (OR =0.83, p=.07). Moderated mediation was found such that among men, higher baseline depression was associated with poor adherence (OR=1.45, p=.01), which in turn predicted having a detectable viral load at 12 months (indirect effect OR= 1.15, p=.045). The path from depression to adherence for women was non-significant (OR1.29, p=.10), resulting in no significant indirect effect (OR=1.03, p=.071).

Conclusion: The process by which depression impacts one's ability to achieve subsequent viral suppression differed by gender in this clinical sample. Future work might examine the contributions of lifetime trauma as a factor affecting both depression and poor ART adherence among women. Identifying the processes for how depression, adherence, and other variables might impact viral suppression for both HIV-positive women and men will be critical to developing gender-responsive interventions and reducing HIV incidence.

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HIV AND STI TESTING CHARACTERISTICS AMONG MEN WHO HAVE SEX WITH MEN IN A SMALL METROPOLITAN REGION OF THE SOUTHEASTERN US

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Background. Men who have sex with men (MSM) in the South continue to be at high risk of acquiring HIV and other STIs, with rates in Georgia and South Carolina well above the national average for most STIs (CDC, 2015a) and HIV (CDC, 2015b). Routine testing for HIV and STIs is critical for early diagnosis, treatment, and transmission prevention. Known HIV and other STI testing characteristics among MSM living in the South are exceedingly limited and warrants examination.

Methods. The present survey study examined history of HIV, anal pap smear, and other STI testing in a sample of 165 mostly White (70%), gay-identified (84%), HIV-negative (84%) adult MSM ($M_{age} = 36.16$, $SD = 13.86$) of the Central Savannah River Area (CSRA) of the South. MSM were categorized into three groups for each type of test: tested in the year prior to the study, tested beyond one year, or never tested.

Results. Descriptive analyses showed approximately three out of five MSM had been tested for HIV in the past year (60.5%), while 11.3% were tested or unsure of HIV testing history, and 28.2% having last been tested over a year prior. Just over 2 in 5 MSM had been tested for other STIs in the year prior (43.2%), 27.2% had never been tested or were unsure, and 39.6% reported last testing over a year prior. Reported anal Pap smear testing revealed one in twenty (5.0%) received one in the prior year, while 91.3% of MSM had never received one, and 3.7% received one over a year prior. Chi-square analyses revealed racial minority MSM were more likely than White MSM to have been tested in the year prior (54.5% vs. 37.4%; $\chi^2 = 7.54$, $p < .05$). MSM under 30 were more likely than older MSM to have never been tested for HIV (20.9% vs. 4.4%; $\chi^2 = 20.55$, $p < .01$). Bisexually-identified MSM were more likely than gay-identified MSM to have never been tested for HIV (26.1% vs. 7.5%, $\chi^2 = 7.40$, $p < .05$). MSM living with HIV were more likely than HIV-negative MSM to have been tested for other STIs in the year prior (66.7% vs. 38.5%; $\chi^2 = 7.29$, $p < .05$) and were also more likely than HIV-negative MSM to have ever had an anal Pap smear (25.9% vs. 5.3%; $\chi^2 = 12.00$, $p < .01$).

Conclusion. Rates of routine HIV and other STI testing should be increased among MSM in the CSRA, particularly among vulnerable groups such as young and bisexual MSM. Greater interdisciplinary outreach and prevention efforts, and LGBTQ community visibility is needed in the CSRA and similar regions to reduce the rates of HIV and other STIs.

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IS TRAUMA ASSOCIATED WITH INSOMNIA SYMPTOMS IN A PUBLIC HEALTH CLINIC SAMPLE OF PEOPLE LIVING WITH HIV/AIDS?

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Introduction: People living with HIV/AIDS (PLWHA) are more likely than the general population to have a lifetime history of trauma and insomnia. We hypothesized that in our HIV clinic sample, insomnia would be associated with number of lifetime traumas and current post-traumatic stress symptoms.

Methods: A public health clinic sample of PLWHA living in a high-prevalence and incidence urban area, Miami (n=69; 75.4% Black, 11.6% Hispanic, 46.4% women, 21.6% sexual minority, mean age = 50.97, $SD=9.09$), were recruited for an observational behavioral sleep study and were asked questions about their history of traumatic events (Brief Trauma Interview), interpersonal violence, and post-traumatic stress symptoms (PC-PTSD Screen); and, about their insomnia symptoms (Insomnia Severity Index, ISI).

Results: In our sample, 88.4% reported significant traumatic experiences, and, on average, participants reported 3.39 traumas over their lifetime ($SD=2.40$; Range = 0–10). A history of interpersonal violence, including physical or sexual abuse was endorsed by 69% of the sample; and, 21.7% of the sample screened in for clinically significant PTSD symptoms on the PC-PTSD screen. Lifetime history of trauma was not associated with current insomnia symptoms. However, current post-traumatic stress (Unstd. $B= 4.84$, $SE= 2.13$) was significantly associated with insomnia symptoms measured by the ISI ($p=.03$).

Discussion: In this sample of diverse PLWHA from traditionally underserved communities, current post-traumatic stress, but not history of a trauma or number of traumas, was associated with insomnia symptoms. One potential explanation for this finding is that the number of traumas in the sample was too high to observe variation. Alternatively, these findings may reflect resiliency to trauma in some participants who may have experienced multiple lifetime traumas, but do not have currently have PTSD symptoms. Future research should examine the co-occurrence of these conditions, implications for self-care and physical health, and the possibility of treating them through a joint intervention to improve psychosocial functioning and health in PLWHA.

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MASCULINITY'S INFLUENCE ON HIV-RELATED HEALTH BEHAVIORS AMONG HIV POSITIVE BLACK MEN WHO HAVE SEX WITH MEN

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Black Men who have sex with men (BMSM) experience the highest rates of HIV in the US. Improved treatment options for persons living with HIV are available through antiretroviral therapies (ART), resulting in nearly normal life expectancies. Yet, engagement in care and ART adherence remains poor among a significant number of BMSM. Identifying and understanding previously unconsidered psychosocial barriers to care and ART adherence are necessary to both improve clinical outcomes among HIV positive BMSM, and reduce incidence of HIV through the use of treatment as prevention (TasP). One potential barrier to HIV-related health engagement in BMSM may be internalized interpretations of masculinity. Although limited, research concerning masculinity's influence on health has demonstrated negative associations among both heterosexual men and MSM. The present study examined the relationship between masculinity and factors related the HIV-related care among HIV positive BMSM. A sample of BMSM ($N = 302$) were surveyed during the 2017 Atlanta Black Pride Festival of which 73 were HIV positive BMSM. Anonymous surveys assessed demographics, masculinity beliefs, alcohol and drug use, health care experiences, and a measure regarding Pre-exposure prophylaxis (PrEP) use among HIV negative partners. Results from independent samples t - tests demonstrated relationships between both the endorsement of masculine ideology and conformity to aspects of masculine gender norms with HIV-related health engagement. Regarding masculine ideology, a significant difference was found among HIV positive BMSM who reported knowing their current plasma viral load ($M = 2.23$, $SD = .95$) versus those who did not ($M = 2.98$, $SD = 1.04$), $p = .03$. With respect to conforming to masculine gender norms, risk-taking (Parent, Torrey & Michaels, 2012) produced significant differences among HIV positive BMSM who reported ART adherence ($M = 1.97$, $SD = .51$) versus those who reported non-adherence ($M = 2.28$, $SD = .11$), $p = .001$. Surprisingly, risk-taking was also related to a reported willingness to encourage PrEP use to an HIV negative partner ($M = 1.95$, $SD = .52$) versus those who reported a lack of willingness to encourage PrEP use ($M = 2.30$, $SD = .31$), $p = .04$. These findings indicate that masculinity influences HIV-related health behavior engagement in HIV positive BMSM. Understanding the role of masculinity as a psychosocial barrier to care engagement is needed in order to enhance linkage to and retentions in care, and treatment adherence interventions for BMSM.

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MECHANISM OF CHANGE IN COGNITIVE BEHAVIORAL THERAPY FOR BODY IMAGE ON ART ADHERENCE AMONG SEXUAL MINORITY MEN LIVING WITH HIV

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Objective: Body image disturbance is a common problem reported among sexual minority men living with HIV, and is associated with poor antiretroviral therapy (ART) adherence. Recently, a novel integrated intervention (cognitive behavioral therapy for body image and self-care; CBT-BISC) was developed and pilot tested to simultaneously improve body image and ART adherence in this population. Although CBT-BISC has demonstrated preliminary efficacy in improving ART adherence, the mechanism of change are unknown.

Method: Participants wererecruited through fliers at Fenway Health, a community health center in Boston that serves the lesbian, gay, bisexual, and transgender community, community outreach, and advertisements placed on social apps targeting sexual minority men.

A total of 44 sexual minority men living with HIV who also reported elevated appearance concerns were recruited. In the two-armed randomized controlled trial, participants were randomized to the CBT-BISC or an enhanced treatment as usual condition (ETAU).

Comparing data from the CBT-BISC condition to the ETAU condition, sequential process mediation via latent difference scores was assessed, with changes in body image disturbance entered as the mechanism between treatment condition and changes in ART adherence.

Results: Overall, the data fit the model well: $\chi^2/df = 1.17$, CFI = 0.98, TLI = 0.96, and RMSEA = 0.06. Participants assigned to CBT-BISC reported greater reductions in body image disturbance from baseline to immediate follow-up, compared to those in ETAU ($b = -14.13$, $SE = 2.43$, $t = -5.79$, $p < .0001$). Reductions in body image disturbance between baseline and immediate follow-up significantly predicted changes in ART adherence between immediate follow-up and long-term follow-up ($b = -1.41$, $SE = 0.24$, $t = -2.35$, $p = .019$). Subsequently, the indirect effect from treatment condition to changes in ART adherence through changes in body image disturbance was significant ($b = 20.01$, $SE = 9.11$, $t = 2.19$, $p = .028$).

Conclusions: One pathway in which CBT-BISC positively impacts ART adherence is through reductions in body image disturbance. Body image disturbance represents one, of likely several, mechanism that prospectively predicts ART adherence among sexual minority men living with HIV.

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METABOLIC RISK FACTORS AS DIFFERENTIAL PREDICTORS OF PROFILES OF COGNITIVE IMPAIRMENT AMONG OLDER HIV+ AND HIV- AGING ADULTS.

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Background: Neurocognitive (NC) functioning among aging persons living with HIV (PLWH) exhibits significant heterogeneity, suggesting discrete subpopulations with differing risk factors for NC impairment (NCI). Metabolic factors have been associated with NC decline; however, their relationship to profiles of NCI and their differential effects by HIV serostatus have not been examined.

Methods: Participants (200 PLWH and 143 HIV-) between 35–79 years ($M=53.8$, $SD=8.7$ years) completed a neuropsychological battery assessing 7 NC domains (verbal fluency, executive functioning, speed of processing, learning, recall, working memory, and motor functioning). Following published procedures, NCI deficit scores were calculated and participants were classified with NCI vs. no NCI both globally and in the 7 domains. Latent class analysis (LCA) was used to identify subgroups of individuals with differing NCI profiles and validity of classification was examined against the Montreal Cognitive Assessment (MoCA) and a self-report of NC decline. Multinomial regression was used to identify demographic and metabolic risk factors differentially associated with classification of PLWH and HIV- participants.

Results: LCA identified 3 subgroups: 1) a normative class with low probabilities of NCI across all domains, 2) a class with high probabilities of NCI in learning and recall, and 3) a class with high probabilities of NCI in all domains (global NCI). Relative to those in the normative class, individuals in the learning and recall NCI class had lower scores on the MoCA ($X^2(1) = 27.532$, $p<0.001$) whereas those in the global NCI class had both lower scores on the MoCA ($X^2(1) = 22.841$, $p<0.001$) and greater self-reported cognitive decline ($X^2(1) = 8.195$, $p=0.004$). HIV+ status predicted global NCI classification ($OR=4.027$, $p=0.004$). The effects of age, diagnosis of hypertension, and hyperlipidemia on classification were moderated by HIV status. Specifically, older PLWH were more likely to be classified as NCI in learning and recall ($OR=1.009$, $p=0.048$) and globally NCI ($OR=1.027$, $p=0.001$). Furthermore, PLWH who had hypertension were more likely to be classified as NCI in learning and recall ($OR=4.442$, $p=0.013$), while PLWH and hyperlipidemia were more likely to be NCI in both the learning and recall class ($OR=3.518$, $p=0.034$) and globally NCI ($OR=6.110$, $p=0.032$), compared to being in the normative class. Controlling for HIV status, a diagnosis of diabetes marginally predicted global NCI classification ($p=0.071$); however, ethnicity and BMI ≥ 30 were unrelated to classification.

Conclusion: Profiles of cognitive functioning can be identified among aging adults and metabolic risk factors confer heightened risk of NCI in the context of HIV disease. Early intervention upon metabolic factors may have implications for improving the neurocognitive outcomes of PLWH.

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POSITIVE LINKS: A MOBILE HEALTH INTERVENTION FOR RETENTION IN HIV CARE AND CLINICAL OUTCOMES WITH 12 MONTHS' FOLLOW-UP

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Background: The field of HIV care is challenged to achieve the 90/90/90 goals of 90% of people living with HIV learning their status through testing for HIV, 90% of those with HIV engaging and remaining in care, and 90% of those in care achieving viral suppression—achieving these goals could end HIV transmission in the U.S. by 2030. Mobile health interventions may help People Living with HIV (PLWH) improve retention in care, associated with improved clinical outcomes. We designed and piloted Positive Links, a clinic-deployed smartphone app for PLWH, and assessed longitudinal impact on retention in care and clinical outcomes including CD4 counts and Viral Loads.

Methods: The program was based at an academic Ryan White Clinic serving a non-urban population in Central Virginia. The Positive Links app features included: educational resources; daily queries of stress, mood and medication adherence; weekly quizzes; appointment reminders; and a virtual support group. Outcomes were analyzed using McNemar's tests for HRSA-1 measures, Bowker's tests for visit constancy, and nonparametric Wilcoxon signed ranks tests for CD4 counts and viral loads. Changes in outcomes at baseline, 6 and 12 months, were analyzed using generalized estimating equations (GEE) methods to account for correlations within subjects over time.

Results: Of 77 participants, 63% were male; 49% black non-Hispanic; and 72% below the federal poverty level. Participants demonstrated sustained usage of the app over 12 months. Participants' retention in care indicated by HRSA-1 increased from 48% at baseline to 91% at 6 months and 80% at 12 months ($p < 0.001$). Visit constancy increased from 26% of participants with the highest visit constancy at baseline to 40% at 6 months and 57% at 12 months ($p < 0.001$). Participants' mean CD4 counts increased from baseline to 6 months and 12 months ($p = 0.001$). Participants' mean viral loads decreased from baseline to 6 months (p

Conclusions: These data show that long-term benefits can be achieved by adding the Positive Links program to clinical care. This is the first study to show effects for both retention in care markers and clinical outcome markers by a clinic-deployed mobile health intervention for vulnerable patients. Next steps include dissemination and implementation research in other Ryan White clinics serving different demographics of PLWH.

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PREDICTORS OF DISCORDANCE BETWEEN HIV-PATIENT AND INFECTIOUS DISEASE PROVIDER ASSESSMENTS OF ART MEDICATION ADHERENCE

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Antiretroviral therapy (ART) non-adherence among HIV-infected individuals is a barrier to disease management that must be monitored by providers. Providers consider several factors (e.g., biomarkers, patient self-report) when estimating adherence; however, discordance between patient and provider assessments of adherence may adversely affect HIV treatment outcomes. The aims of the current study were to: determine the prevalence of discordance between patient- and provider-assessed ART adherence within an HIV primary care setting, and explore predictors of discordance. 250 HIV-infected Russian women (age 19–35, $M = 30$) provided estimates of ART adherence (i.e., percentage of ART medications taken in the previous month) using an audio computer-assisted self-interview (ACASI). Infectious disease doctors ($n=11$) also provided estimates of their patients' ART adherence during the previous month. Extracted medical chart data (e.g., most recent viral load) and a self-report measure of drug use (The Drug Abuse Screening Test; DAST) were examined as potential bivariate predictors of discordance. Overall, patient- and provider-assessed adherence were not related ($p = .09$) and discordance was found in 32% of cases. Providers estimated patients' adherence as being $\geq 95\%$ in 74% of cases where patients reported $< 95\%$ adherence ($n=69$). Having a higher total DAST score ($b = 0.15$, $p < .05$), and citing side effects as the reason for ART change ($OR = 2.05$, $p < .05$), were associated with patients' estimates of adherence being lower than their providers' estimates. Providers estimated adherence as being $< 95\%$ in 17% of cases where patients reported $\geq 95\%$ adherence. Having a greater number of ART regimen changes ($b = 0.37$, $p < .05$), any ART medication interruptions ($OR = 4.33$, $p < .001$), and past ($OR = 4.56$, $p < 0.001$) and current ($OR = 18.26$, $p < 0.001$) adherence concerns noted in patient's medical chart were associated with providers' estimates of adherence being lower than patients' reports. Factors that may be salient to providers who rate patients' adherence as lower focused on ART regimen changes or interruptions along with recorded adherence concerns. Patients who experience more symptoms of substance use, and those who have experienced medication side effects may rate their adherence as lower than their providers do. Providers may optimize adherence through early detection and addressment of adherence barriers by communicating with their patients about these factors.

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PSYCHOSOCIAL AND SYMPTOM ASSESSMENT IN PERSONS TREATED OR MONITORED FOR ANAL HIGH-GRADE SQUAMOUS INTRAEPITHELIAL LESIONS

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Background– Anal cancer incidence is increasing in the United States, especially among HIV-infected men and women, and is caused by infection with human papillomavirus (HPV). Screening for and treating or monitoring anal high-grade squamous intraepithelial lesions (HSIL) may compound the psychosocial burden of this population, including new treatment-related symptoms, or anxiety related to monitoring. We established collaboration with the ANCHOR (ANal Cancer HSIL Outcomes Research) trial (AIDS Malignancy Consortium; AMC-A02, -A03) to examine the impact of treating anal HSIL versus active monitoring (AM) on psychosocial outcomes and symptom burden.

Methods– English-speaking participants from 8 ANCHOR sites completed the ANCHOR Health-Related Symptom Index (A-HRSI), along with the Functional Assessment of Cancer Therapy – General (FACT-G) and M.D. Anderson Symptom Inventory (MDASI) within 2 weeks of treatment, or randomization for AM participants. A-HRSI item scores were compared between treatment and AM groups via independent samples *t*-tests. Pearson correlations were examined between A-HRSI items and similar items from FACT-G and MDASI.

Results– 110 participants (mean age = 50.6 years, 54% undergoing treatment, 80% gender male, 70% racial minority, 7% Hispanic) completed this phase of the study. Participants in the treatment group experienced significantly higher anal pain ($t(108)=2.83$, $pt(108)=3.71$, $pt(108)=2.02$, $pp's<0.05$) with corresponding FACT-G and MDASI items (e.g., pain, anxiety, depression, mobility impact).

Discussion– Initial findings indicate that participants in the treatment group are experiencing higher acute symptom burden than those who are being actively monitored without treatment. A total of 300 ANCHOR patients will be accrued to this study. Further, we will prospectively monitor clinically meaningful differences in psychosocial outcomes and symptom burden in this participant population toward enhancing our understanding of meeting their respective needs.

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‘THIS ILLNESS AIN’T GONNA KILL ME’ - A QUALITATIVE INSIGHT TO HIV AND FRAMEWORK TOWARDS THE DEVELOPMENT OF AN HIV STRESS SCALE

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Research on HIV and stress is not uncommon in academic literature. However, little research has been done using a qualitative approach that aims to identify specific facets of stress experienced by people living with HIV (PLH). Furthermore, there is no developed, validated self-report measure of stress specific to living with HIV that can be used in either clinical settings or research settings. This study uses Grounded Theory qualitative methodology and semi-structured interviews to assess and conceptually develop stress in PLH. Participants (n=20) were 12 PLH and 8 individuals who work primarily with clients who are living with HIV. Participants engaged in semi-structured, audio recorded interviews that were transcribed for data analysis. Identified emergent themes included Housing Strains, Engagement in Substance Use, Limited Financial Abilities, Relationship Dynamics, Internal Pressures, and Psychosocial Resiliency. Results from this study suggest that unsatisfactory housing situations, such as location, lack of choice, and intrusive environment, can foster growth of stress. Engagement in substance use can be seen as both a previously utilized and familiar method of coping with stressors as well as a rational behavior that does not cognitively register as coping with stress. Limited financial means can create a constraint cycle in which the individual cannot fund basic necessities and is thus unable to be employed; this cycle can lead to a situation of strained financial resources. Because of this cycle, necessities are often placed on a hierarchy of demand and neglect. With regard to relationships, HIV both can build and sever bonds with others, depending on how disclosure is received. Lastly, data showed an overall positive regard towards life and towards the future as HIV+ individuals progress in life. These accounts can be utilized in creating a greater understanding of stress for PLH and in developing a more comprehensive and cohesive care for PLH who are experiencing stress. Furthermore, this study was one of the first to support, via qualitative data, identified domains of stress in PLH. Further research is needed to quantitatively validate these domains; however this study now provides the framework to do so.

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TO BE OR NOT TO BE RELIGIOUS: THE ASSOCIATION BETWEEN RELIGIOSITY AND SEXUAL HEALTH AMONG BLACK BISEXUAL MEN

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While Black churches are central tenants within the U.S., playing an important role in the establishment of norms and defining community values, they are also major sources of conflict for Black sexual minorities (Haile, Padilla, & Parker, 2011; Smith, Simmons, & Mayer, 2005). Churches with traditional teachings may stigmatize sexual minorities which can lead to higher levels of depressive symptoms, lower psychological well-being, and sexual health risks (Barnes & Meyers, 2012). However, some research examining sexual minorities and religion has emphasized the importance of spirituality and a positive relationship with God as being associated with greater well-being (e.g., lower internalized homophobia or biphobia and beneficial mental health outcomes; Barnes & Meyers, 2012). In order to examine the association between religiosity and sexual health among Black bisexual men, the current study surveyed and conducted STI testing with 225 Black bisexual men, (*Age* = 36, *SD* = 12). Respondents self-identified as bisexual and were sampled in Atlanta, GA. Overall, results demonstrated that higher levels of religiosity were significantly associated with lower odds of HIV and Chlamydia/Gonorrhea diagnosis. Specifically, Black bisexual men who reported higher levels of religiosity had a significantly lower likelihood of being diagnosed with HIV compared to those who reported lower levels of religiosity, *OR* = 0.18 [0.05–0.27], *p* < .01. Additionally, Black bisexual men who reported higher levels of religiosity had a significantly lower likelihood of being diagnosed with Chlamydia/Gonorrhea compared to those who reported lower levels of religiosity *OR* = 0.44 [0.24–0.79], *p* < .05. These findings have implications for intervention and prevention strategies. Given that religion is a contributor to the well-being of Black individuals, tactics that promote religion and a positive relationship with God may be employed to best support Black bisexual men. Additionally, these findings suggest that further investigation is needed regarding how individuals conceptualize and engage in religion. For some, religion may be associated with more traditional behaviors such as attending strict services, while others may regard religion more in terms of spirituality and a personal relationship with God. Both religiosity and spirituality may have related but different effects on the health of Black bisexual men.

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YOGA INTERVENTIONS TO ENHANCE PSYCHOLOGICAL AND PHYSICAL HEALTH FOR PEOPLE LIVING WITH HIV: A SYSTEMATIC REVIEW

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Objective: The purpose of this systematic review is to examine the use of yoga to enhance psychological and biomedical health outcomes for people living with HIV (PLWH).

Methods: Studies were included if they (a) evaluated a yoga intervention in a sample of PLWH; (b) included RCTs with a control condition or a single group with pre- and post-test measures; (c) assessed a psychological or biomedical outcome; and (d) were available through July 2017. Comprehensive electronic database searches identified 208 unique studies with relevant key terms; of these, 8 studies met our inclusion criteria.

Results: The eight studies were published between 2004 and 2017; samples included a total of 328 participants (*M* age = 44 years; 37% women; *M* years living HIV = 12). The studies were conducted in the United States (3), India (3), Canada (1), and Mexico (1). Yoga components included breathing techniques, physical movement/postures, and meditation practice. Yoga styles included Sudarshan Kriya, Hatha, Iyengar, and Asthanga Vinyasa. Six of the eight studies included a control condition; controls received standard care (3) or assessment only (3). The most common outcomes measured were stress, depression, and quality of life. Compared to controls, PLWH who received the yoga intervention reported significant reductions in depression, stress/distress, as well as improvements in quality of life. No significant changes in biomarkers of stress (i.e., cortisol) or HIV (i.e., CD4+ cell counts) were observed between- or within-groups.

Conclusion: Yoga is widely practiced and purported to offer a range of health benefits. However, few empirical studies have examined the potential health benefits of yoga practice in PLWH. Additional RCTs are needed with adequate control groups and follow-up assessments to better understand the possible effect of yoga in PLWH.

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DEPRESSION AND MEDICATION NONADHERENCE FOLLOWING LUNG TRANSPLANTATION

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Background: Adherence to lifelong immunosuppressant medications (IS) is essential for positive clinical outcomes in post-transplant patients. Depression post-transplant has been linked to increased risk for morbidity and mortality in lung transplant patients, and has been associated with medical non-adherence in a variety of patient populations. However, the relationship between IS adherence and depression and on clinical outcomes remains unknown.

Methods: We conducted a retrospective study of an initial sample of 65 lung transplant recipients at Duke University Hospital transplanted in 2014 and followed for one year. To assess depression, patients completed the Center for Epidemiological Studies Depression inventory (CES-D) 2 months following their lung transplant. IS levels and time to hospitalizations within 1 year post-transplant as well as mortality data were extracted from medical records. Individual IS target ranges were obtained at 3, 6, and, 9 months post-transplant; values were considered as out of range if they were below or above the ± 3 point window for each target IS level.

Results: The average CES-D score was 8.8; 20% of patients obtained clinically significant values ≥ 16 . 33% of the IS levels were determined to be out of range. Higher CES-D scores were associated with greater incidence of out of range values ($r = 0.27$, $P = .044$). Both depression and out of range IS levels were associated with greater mortality (HR = 1.64, $P = .01$; HR = 1.75, $P = .016$ respectively). In a multivariate model, CES-D scores remained significant (HR = 1.66, $P = .008$) while adherence was attenuated (HR = 1.59, $P = .101$).

Conclusion: Both depression and IS nonadherence were predictive of greater adverse clinical events. While depression was associated with non-adherence to IS treatment, it appeared that both depression and IS non-adherence were predictive independently of worse clinical outcomes.

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PATIENT ACTIVATION, PERCEIVED STRESS, AND MEDICATION ADHERENCE IN PATIENTS WITH UNCONTROLLED HYPERTENSION: THE ACT STUDY

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Objective: African Americans suffer from disparately high rates of poor blood pressure control (i.e., at least two measures of systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg) as compared to non-African Americans in the United States. Research to date has identified low medication adherence as a barrier to achieving hypertensive control in this population. Further, higher perceived stress has been linked to a decrease in the likelihood of patient adherence to medication, whereas patient activation (i.e., degree to which a patient is engaged in the treatment and management of disease) promotes better medication adherence. The main objective of this study was to elucidate the relation between perceived stress and medication adherence, and to examine the possible role of patient activation as a mediator.

Methods: The current study utilized data from the Achieving Blood Pressure Control Together Study, a randomized controlled trial that administered and evaluated behavioral interventions to increase hypertension self-management in African Americans with uncontrolled blood pressure who were prescribed anti-hypertensive medication in a primary care setting ($N=149$). Patients completed validated measures of perceived stress, patient activation, and medication adherence, among other measures, at baseline during a telephone-administered questionnaire. Correlational analyses addressed relations among study variables. Regression and bootstrapping analyses were conducted to assess the proposed mediation model.

Results: Greater perceived stress and less patient activation were associated with worse medication adherence. Perceived stress [$B = -.10, p < .001$] and patient activation [$B = .03, p = .001$] were independent predictors of medication adherence in the expected direction, accounting for 19.7% of the variance. However, patient activation did not mediate the relation between perceived stress and medication adherence. Notably, controlling for perceived discrimination, depression, and age did not change results.

Conclusions: Hypotheses were partially supported by these findings. Reduced perceived stress and greater patient activation were predictive of higher adherence to anti-hypertensive medication. Interventions targeting both perceived stress and patient activation could improve medication adherence among urban African Americans and ultimately help these patients gain blood pressure control.

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THE CREATION AND UTILIZATION OF CLINICAL VIGNETTES TO INDUCE OUTCOME EXPECTANCIES IN EMERGING ADULTS

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Introduction: Although patient-provider communication has been documented as an important influence on patient's intentions and behaviors, little is known about whether provider communication aimed at altering patient outcome expectancies may be beneficial in enhancing adherence and behavior. Vignette designs may be an ideal method for investigating how provider communication influences patients' outcome expectancies. This study examined whether study-created clinical vignettes influenced outcome expectancies in emerging adults.

Methods: 95 emerging adults (ages 18–25) provided demographic information, completed the Beliefs About Medication Scale (BAMS), and answered two study-created questions assessing whether the manipulations were successful in altering positive outcome expectancies (POE) or negative outcome expectancies (NOE) after being randomized to listen to one of three audio vignettes. Vignettes described a hypothetical encounter between a physician and participant in which the participant was seeking treatment for strep throat and was prescribed antibiotic medication. Vignettes varied in terms of the content of provider dialogue either stressing the benefits of the medication (POE), alleviating negative concerns regarding the medication (NOE), or providing standard care communication. Factual information about the prescription and essential communication points such as: the medication, purpose, duration of use, directions, and possible adverse effects were included in all vignettes.

Results: Participants randomized to the POE and NOE vignettes indicated that POE and NOE were induced significantly when compared to the standard care condition. However, for participants randomized to the POE vignette condition, there were no significant differences in BAMS' ratings of POE ($M=111.89, SD=16.62$) or NOE ($M=118.57, SD=14.66; t(55)=-1.53, p=.13$). There were also no significant differences in ratings of POE ($M=22.45, SD=9.18$) or NOE ($M=19.82, SD=7.99$) for those randomized to the NOE vignette condition ($t(58)=1.12, p=.27$).

Conclusions: Study-created vignettes enhanced POE and NOE when compared to standard care communication. Specifically, the NOE condition enhanced POE while reducing NOE. However, outcome expectancies, as measure by the BAMS, did not differ significantly for participants randomized to each vignette condition. Future research will examine whether provider communication emphasizing POE or NOE will result in higher intent to adhere than standard communication.

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ACCULTURATION, MEDICATION ADHERENCE, AND COMPLEMENTARY AND ALTERNATIVE MEDICINE USE AMONG CAMBODIAN REFUGEES AND IMMIGRANTS

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Purpose: Nearly 40 years after the brutal Khmer Rouge Regime (1975–1978), and mass immigration to the US, *Cambodian* American refugees still suffer from severe physical and mental health issues. As part of their cultural tradition, complementary and alternative medicine (CAM) has been widely documented as an important and regular source of health care. Previous research indicates that the use of ethnic CAM abates as people acculturate to the customs of mainstream society. The extent to which CAM use and western medication adherence changes as a function of time in the US remains unknown in this population.

Hypothesis: This study hypothesized that Cambodian refugees (immigrated before 1994) would use less CAM and adhere more to western medication than Cambodian immigrants (immigrated after 1994).

Method: Participants (N=338) were recruited from Cambodian patients being seen in a primary care setting. Depression and PTSD were assessed using the Hopkins Symptom Checklist and Harvard Trauma Questionnaire, respectively. CAM questions, drawn from the 2001 California Health Interview Survey-CAM, examined uses of CAM providers, techniques, and supplements. Relationships between immigration status, Western medication adherence, and CAM uses were evaluated using regression analyses, controlling for depression and PTSD.

Results: Refugees have lived in the US more than three times as long as immigrants (30.7 vs 8.2 years, $p<.00$) and PTSD (means=2.0 vs 2.3, $p=.00$) compared to refugees. Despite difference in time in US and mental health status, there were no statistically significant differences between the two groups in CAM use (e.g. CAM providers, common CAM techniques in the Cambodian culture, such as cupping, and supplements) or in Western medication adherence. Generally both immigrants and refugees reported that their CAM use was usually done in addition to taking their regular medications (means=1.5 vs 1.8, $p=.34$), and was rarely practiced instead of taking their regular medication (means=4.3, $p=.42$) on a 1–5 scale (1=always; 5=never).

Discussion: The findings from this research highlight that in a sample of Cambodian American patients, acculturation may have less of an influence on health practices than previously noted. Recognizing the long-held cultural practices of Cambodian Americans is an important step for providing high quality medical care.

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CAREGIVER-RELATED CORRELATES OF MEDICATION NONADHERENCE AMONG PEDIATRIC LIVER TRANSPLANT RECIPIENTS

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Introduction: Nonadherence to immunosuppressant medication poses a significant challenge in the care of pediatric liver transplant recipients. Prior research has focused on adolescent populations, but this problem appears to be common among younger pediatric patients as well. Since children under twelve generally rely on caregivers in the management of their medication regimen, caregiver-related factors may provide additional insight into nonadherence among members of this younger age group. This study examined possible caregiver-related factors associated with nonadherence among child-age pediatric liver transplant recipients.

Methods: Pediatric liver transplant recipients ages 0–12 and their primary caregivers (n=34) were recruited from one pediatric transplant center. Mean (SD) age at enrollment was 6.32 (3.32) years. Caregivers completed a series of questionnaires to assess socioeconomic status, health literacy, interpersonal support, psychological distress, illness perceptions, child knowledge of and responsibility for illness management, parenting practices, and barriers to adherence. Patient medical records were reviewed over a period of six months to calculate the Medication Level Variability Index (MLVI), a measure of the variability of immunosuppressant levels (tacrolimus) in the blood. A higher MLVI indicates greater nonadherence with levels above 2 being associated with poor outcomes. Correlational analyses were conducted to determine if there were associations between sociodemographic factors, questionnaire scores and adherence.

Results: Approximately 35% of patients were classified as nonadherent (MLVI >2.5) during the study period. Mean MLVI was 1.92 (1.66) for the sample. MLVI was negatively correlated with child knowledge of and responsibility for illness management ($r=-0.45$, $p=0.03$); children with a higher degree of management over their care displayed less variability in blood medication level. There were no other significant correlates of nonadherence.

Conclusions: Medication nonadherence was identified as a concern in this child-age transplant population. The correlation between adherence and child knowledge of and responsibility for illness management suggests that self-management skills may be important even in this younger age group. Additional research is needed to better understand these findings in the context of family-level variables. Importantly, in this diverse sample, socioeconomic status was not associated with nonadherence.

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IMPLICATIONS OF TREATMENT EMPOWERMENT IN PREDICTING ADHERENCE IN MULTIPLE SCLEROSIS

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Despite advances in Multiple Sclerosis (MS) treatment options, their capacity to improve patient outcomes is hindered when patients choose not to take them. The causes of non-adherence are complex and multifactorial but can be approached as a trade-off between necessity beliefs and concerns. The Beliefs about Medicines Questionnaire (BMQ) assesses necessity and concerns directly and has shown to accurately predict adherence in long-term conditions. A patient's decision to adhere is also likely to be influenced by their level of understanding and sense of involvement in treatment decisions through interaction with their clinician.

The aim of this study was to assess the impact of treatment empowerment on necessity beliefs and concerns about medicines in MS patients to highlight ways to improve treatment outcomes in the future.

In an international quantitative survey of 1040 participants from 9 different countries (UK, USA, Canada, Australia, Germany, France, Spain, Italy and Sweden), treatment empowerment was assessed using the Treatment Empowerment Scale (TES) and necessity beliefs and concerns around medicines, as a predictor of adherence, using the BMQ.

Treatment empowerment displayed a significant positive correlation with necessity beliefs ($r=0.1562$, $p=0.0000$) and a negative correlation with concerns ($r=-0.1027$, $p=0.0009$). The correlation with necessity beliefs was more pronounced in patients who were on treatment (necessity beliefs: $r=0.2336$, $p=0.0000$; concerns: $r=-0.1050$, $p=0.0052$). However, there was no significant correlation between concerns and treatment empowerment in patients not being treated ($p>0.05$).

When considering only patients currently on treatment in countries within Europe, the correlation between treatment empowerment and both necessity beliefs and concerns increased ($r=0.2722$, $p=0.0000$ and $r=-0.1483$, $p=0.0014$, respectively).

These findings indicate treatment empowerment impacts necessity beliefs and concerns around medicines in MS patients, increasing the likelihood to adhere. They also highlight variation in the degree of impact that treatment empowerment may have on patients currently treated and untreated, as well as in country-specific contexts.

Thus, future health policy in MS should consider the importance of treatment empowerment. Further research in understanding the contextual changes will also be key to develop country specific policies that are tailored to reflect cultural aspects affecting treatment empowerment.

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MEDICATION BELIEFS AND ADHERENCE AMONG YOUNG ADULT WOMEN

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Transition to college is associated with declines in medication adherence, and greater independence enables college students to make health-related decisions that more directly reflect their personal beliefs. Negative beliefs about medications are a risk factor for poor adherence among middle-aged and older adults, but these relationships are poorly articulated among emerging adults, particularly among young women, who are significantly more likely to take daily prescription medications compared to their male peers. The purpose of this study was to examine the relationship between medications beliefs and daily adherence among a representative sample of female college students.

Undergraduate women ($n = 183$; mean age = 19.38; 28% non-white) who were prescribed daily medication completed the eight-item Morisky Medication Adherence Scale and the Beliefs about Medicines Questionnaire. About 94% of participants endorsed at least one problem with adherence. Participants generally reported low levels of concern about their own medications (mean = 9.06), low perceived necessity of their daily prescriptions (mean = 10.87), and positive attitudes towards the use (mean = 10.84) and safety (mean = 7.95) of medications. Pearson's correlation coefficients were calculated to determine the relationships between adherence and concerns with one's own medication, perceived necessity of one's own medications, beliefs about general medication overuse, and beliefs about the harmfulness of medications. We also conducted a series of hierarchical linear regressions predicting medication adherence from each belief variable. Adherence scores were positively associated with concerns about one's own medications ($r = 0.23$, $p = 0.004$), but not with other beliefs about medicines (all p values >0.05). Concerns about one's own medications significantly predicted adherence ($\beta = 0.19$, $p = 0.014$), and accounted for significantly more of the variance in adherence than that associated with demographics alone ($F(3, 169) = 5.005$, $p = 0.002$).

Women's concerns about the long-term effects of their current medications were a significant risk factor for poor adherence in our sample. However, other negative beliefs about medication were not significantly related to adherence. These findings suggest that targeted efforts by healthcare providers to address medication-specific concerns may have a positive effect on adherence among young adult women.

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MHEALTH MEDICATION REGIMEN ADHERENCE PROGRAM FOR HYPERTENSIVE HISPANIC ADULTS

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Background: Uncontrolled hypertension (HTN) and medication nonadherence (MNA) are more prominent among Hispanics compared to non-Hispanic whites and African Americans. Advances in wireless health technology enable real-time monitoring of medication adherence (MA) and blood pressure (BP), facilitating timely patient provider communication including, reinforcement/motivational feedback to patients and quicker titration changes by providers. The purpose of the current study was to conduct a 6-month smartphone enabled efficacy trial addressing medication adherence (MA) and BP control among Hispanic adults.

Methods: The research design was a 6-month, two arm efficacy trial including an experimental (Smartphone Medication Adherence Stops Hypertension - SMASH) group and a standard care (SC) group. SMASH participants utilized an electronic medication tray, Bluetooth enabled, BP monitor and the SMASH app to monitor home-based adherence to their medical regimen. The SC participants received text messages including links to PDFs and brief video clips containing healthy lifestyle tips for attention control.

Results: Participants were 54 Hispanic adults (mean age: 46.5 yrs) with uncontrolled HTN. They were randomly assigned to either SMASH (n=26) or SC group (n= 28). At baseline, no participants had controlled systolic BP (SBP). Baseline group averages for SBP did not differ (150.7 and 152.3 mmHg, $p = .53$) between the SC and SMASH groups, respectively. At the 1, 3, and 6-month time points, SBP averages were significantly lower in the SMASH versus SC groups, respectively (Month 1: 124.7 vs 141.3; Month 3: 118.8 vs 136.6, Month 6: 121.2 vs 145.7 mmHg; all p -values $< .01$). At months 3 and 6, there was a significant difference between the % of participants meeting JNC8 cutoffs for SBP control (Month 3: 37.5 vs 84.0%; Month 6: 26.3 and 72.2%, both p 's $< .01$) for SC and SMASH groups, respectively. Average medical regimen adherence, as indicated by timestamped medication intake and BP monitoring for the SMASH group was 88.5% across the 6-month trial.

Conclusion: Our findings indicate that our smartphone enabled medical regimen self-management program may be an effective solution for the promotion of MA resulting in statistically and clinically significant reductions in SBP among Hispanic adults with uncontrolled HTN.

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POSITIVE AFFECT AND MEDICATION ADHERENCE IN CHRONIC CONDITIONS: A SYSTEMATIC REVIEW

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Suboptimal medication adherence (MA) causes increased morbidity and mortality, and inflates the cost of healthcare in the United States by \$100 billion annually. Those suffering from chronic conditions are at increased risk of non-adherence as compared to those with acute medical conditions. Although there is ample evidence demonstrating that negative affect is associated with poor health outcomes, and there is some evidence that positive affect (PA) improves health outcomes, to date, no systematic review examining the relationship between PA and MA in those living with chronic conditions has been published. The objective of this systematic review was to characterize the relationship between PA and MA in adults with chronic medical conditions.

Searches were carried out in PsycINFO, PubMed, CENTRAL and EMBASE. There were no limits on study type, publication date, or language. Studies of participants living with chronic medical conditions and reporting a relationship between PA and MA were eligible for inclusion if PA was measured prior to or concurrently with MA, regardless of participant demographics.

Eight studies met inclusion criteria. All studies were prospective cohort or cross-sectional in nature, and examined PA and MA in people living with HIV or cardiovascular conditions. All but one study outcome, which was null, indicated a positive relationship between PA and MA in these two conditions (e.g. Pregnant HIV-positive participants who felt happy all/most of the time were more likely to report perfect MA postpartum, OR = 1.69; 95% CI = 1.14 – 2.51, $d = 0.42$, and antepartum, OR = 1.78, 95% CI = 1.24 – 2.54, $d = 0.46$) (Bardeguet et al., 2008). While the literature on the relationship between PA and MA in chronic conditions is nascent, results of this systematic review suggest a positive relationship between PA and MA in HIV and cardiovascular conditions with varying effect sizes, $d = 0.03 - d = 1.27$. As studies controlling for NA revealed small but positive results for this relationship (e.g. HIV-positive participants with PA one SD above mean at baseline were more likely to report medication persistence over 18-month follow-up, OR = 1.08, 95% CI = 1.01 – 1.16, $d = 0.04$) (Carrico & Moskowitz, 2014), the current review provides some indication that PA positively impacts MA in an independent manner.

In order to elucidate this relationship, research must examine whether the positive association seen in the current review remains directionally similar in bivariate analyses, and over chronic conditions for which there is not currently data. Should future work examine these factors, and should the relationship between PA and MA remain similar after more comprehensive assessment, healthcare providers have an opportunity to implement potentially low-cost, effective interventions to increase MA.

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RELATIONSHIP BETWEEN SATISFACTION WITH INFORMATION ABOUT MEDICINES SCALE (SIMS) AND MEDICATION ADHERENCE: A NARRATIVE REVIEW

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Patient satisfaction with different aspects of care can determine medication adherence but it is not known whether this relationship extends to the satisfaction with information received about medicines. This study aimed to explore the relationship between patients' satisfaction with information about medicines, as assessed by the Satisfaction with Information about Medicines Scale (SIMS), and medication adherence. SIMS is a validated scale measuring the extent to which patients feel they have received sufficient information about their medicines.

Searches using pre-determined terms, including SIMS and adherence, were performed on PubMed, EMBASE and Google Scholar. Results were screened to identify studies investigating the relationship between SIMS and medication adherence.

From 493 citations, 30 studies met the inclusion criteria. Ninety-three percent of included studies were conducted in adults and two in children. Most studies took place in the UK (40%). Participant ages ranged from 2 to 92 years. Sample sizes ranged from 43 to 523 participants, with studies lasting between 10 days to 4 years. The most common disease areas were neurological conditions (20%) and cancer (13%), though 20% of studies included more than one chronic disease. Self-reported adherence was used in 93% of studies.

Just over half (53%) of the studies showed a significant relationship between SIMS and adherence. In contrast, 47% of studies found SIMS had no effect on adherence. All significant studies reported the same direction of effect – higher SIMS scores were related to higher adherence – though the strength of the relationship varied greatly between studies. Significant studies varied in age, country, sample sizes, study duration and disease area – no single factor appeared to be associated with whether SIMS had a significant relationship, or not, with adherence.

This narrative review suggests that satisfaction with medicines information, as measured by SIMS, is not consistently associated with medication adherence. The use of self-report measures in almost all studies may have affected the reliability and validity of results. Whilst SIMS may be useful to explain adherence in certain populations, satisfaction alone does not seem to be a reliable predictor of adherence in all cases. Other factors may have a greater role in influencing adherence. For future adherence interventions to be successful, factors beyond satisfaction should be explored.

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SELF-EFFICACY PREDICTS MEDICATION ADHERENCE ACROSS 18-MONTHS IN ADOLESCENTS WITH CHRONIC KIDNEY DISEASE

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Objective: Adolescents with chronic kidney disease (CKD) often exhibit poor adherence to antihypertensive medications. Adherence is vital to slowing disease progression (i.e., need for dialysis or transplant). Findings from other illnesses suggest that modifiable factors, including barriers to adherence and self-efficacy, are associated with adherence. This study examines how barriers and self-efficacy are associated with adherence to antihypertensive medication over time in adolescents with CKD.

Methods: Participants included 93 adolescents with CKD (56% male, 44% Caucasian, 14% CKD stage 4–5, M age=15.02 years, SD =2.57, range 11–20 years). Adolescents reported on barriers to adherence (Adolescent Medication Barriers Scale) and self-efficacy for taking medications across different situations (e.g., when the adolescent is tired or in a negative mood; Medication Self-Efficacy Scale) at baseline. Adherence was assessed 4 times every 6 months for a 2 week period using MEMS cap. Linear mixed models were used to examine changes in adherence over time and longitudinal relations with barriers and self-efficacy, controlling for gender, race, and estimated glomerular filtration rate (eGFR; calculated with the Bedside Schwartz equation).

Results: Adherence was stable over time (baseline M =77.37%, SD =23.66). Male gender (B =10.75, SE =4.39, p =.02) and self-efficacy (B =3.21, SE =1.21, p =.009) were significantly associated with adherence across time. Race, eGFR, and barriers to adherence were not significantly associated with adherence. There was a random effect for participant (B =283.89, SE =58.51, p <.001) with 47.31% variability in adherence accounted for by between person variability.

Conclusions: Given that adherence was stable within person over time, poor adherence will likely continue without intervention. Male gender and higher self-efficacy were associated with higher adherence. There was no association between adherence and eGFR, race, or barriers to adherence. Adolescents' levels of self-efficacy for taking medications in potentially challenging situations appear to have greater influences on adherence longitudinally than actual barriers to adherence. Future research should evaluate interventions that target self-efficacy for taking medications in various situations with the goal of facilitating improved adherence in adolescents with CKD.

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THE USE OF THE TREATMENT-EMPOWERMENT SCALE (TES)TM TO MEASURE THE IMPACT OF EMPOWERMENT ON ADHERENCE: A REVIEWEva Raebel, PhD, MSc, BSc¹, Helen Lycett, BSc MSc², Tom Kenny, BM, MSc PH(HSM), MFPH, MBA³¹Spoonful of Sugar Limited, London, England, United Kingdom; ²Spoonful of Sugar, London, England, United Kingdom; ³Spoonful Of Sugar, London, England, United Kingdom

Adherence guidelines recommend involving patients in treatment decisions but empowerment is not routinely measured in interventions. The Treatment-empowerment scale (TES)TM is a validated measure of patients' perceptions of empowerment and their degree of involvement with treatment. The higher the TES score, the greater perception of empowerment.

This study aimed to review studies using the TES to assess the impact of treatment empowerment on medication adherence.

Studies citing Webb et al.¹ were identified in PubMed and Google Scholar and screened for the inclusion of TES. Those including TES as a determinant of adherence were selected for review. Study characteristics and the impact of TES on adherence were extracted.

From 44 citations identified, four studies met the inclusion criteria: 3 cross-sectional studies (UK) and 1 pilot randomized controlled trial, RCT (Canada). Disease areas included HIV (n=3; sample size =132) and epilepsy (n=1; sample size=1127). Mean age ranged between 39–42.

Two studies found low adherence related to perceptions of a lack of involvement in treatment decisions and patients with high TES scores reported: epilepsy - fewer practical barriers and concerns about side-effects, stronger necessity beliefs about medication and positive attitude towards treatment; HIV - lower levels of intentional non-adherence, less likely to believe clinicians were overprescribing medication. One study found a moderate relationship between empowerment and adherence after 4 days, but not in the long-term. The RCT used TES as a measure of satisfaction with healthcare professionals, which did not explain adherence.

This review indicates that control over treatment has an impact on adherence and most studies suggest TES is a reliable predictor tool. A caveat to our findings is the small sample size, which limits the generalisability of our results but highlights the need for research on this subject to verify the properties of TES in real-life settings and in other disease areas. Measuring patients' perceptions of their degree of empowerment has scope for predicting adherence levels and potentially being able to tailor interventions within the patient group depending on their TES score.

1. Webb et al. 2001. *Int J STD AIDS*;12:103–107.

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THE UTILITY OF THE EXTENDED COMMON-SENSE MODEL (ECSM) TO EXPLAIN ANTIRETROVIRAL THERAPY (ART) INITIATION

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Antiretroviral therapy (ART) is an effective treatment for preventing the development of AIDS and reducing mortality; however, its success depends on patients initiating treatment and evidence suggests not all people living with HIV start prescribed ART. The common-sense model of self-regulation (CSM) is a dynamic framework which aims to explain the processes by which beliefs about illness impact health-related behaviour. The extended CSM (eCSM) proposes that the inclusion of general and specific beliefs about treatment increases the ability of the CSM to explain treatment-related behaviours. According to the eCSM, ART-initiation is likely to be influenced by patients' beliefs about treatment and their illness perceptions.

This study aimed to establish the utility of the eCSM to explain ART-initiation by conducting a retrospective data analysis from a prospective, longitudinal, follow-up study of HIV-positive patients attending a HIV clinic in the UK.

HIV-positive patients completed validated questionnaires measuring illness perceptions and beliefs about treatment at the time ART was recommended (baseline). ART-initiation was measured using pharmacy data. Illness perceptions and beliefs about treatment were compared between patients who started or declined ART. Patients who declined ART at baseline were followed up after 1, 6 and 12 months. Beliefs about ART were compared between baseline and ART-initiation for those who later initiated ART and between baseline and 12-month follow-up for those who continued to decline.

Of 136 patients recommended ART, 38 (27.9%) declined ART at baseline. Baseline associations between illness perceptions, pharmaceutical schema and beliefs about ART were consistent with the eCSM. Hierarchical logistic regression indicated illness perceptions, pharmaceutical schema and beliefs about ART explained 31.0% of variance in ART-initiation. Beliefs about ART and pharmaceutical schema explained 20.4% of variance in ART-initiation over and above clinical variables and illness perceptions. Subsequent ART-initiation among those who initially declined was associated with an increase in ART-necessity beliefs and a decrease in ART-concerns.

This study provides support for the utility of the eCSM in explaining ART-initiation. Findings suggest interventions may increase ART-initiation by eliciting and addressing illness perceptions and beliefs about ART.

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TREATMENT BELIEFS, ADHERENCE AND OUTCOMES IN PATIENTS WITH ASTHMA: THE IMPORTANCE OF BELIEFS IN UNDERSTANDING ICS NONADHERENCE

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Background: Non-adherence to inhaled corticosteroids (ICS) is a key modifiable factor contributing to asthma morbidity and mortality. Previous studies show that ICS nonadherence is related to patients' beliefs, particularly their perceptions of personal need for daily treatment and concerns about taking ICS. This study maps ICS necessity beliefs and concerns across six countries examining variations in beliefs and whether beliefs relate to adherence and asthma outcomes.

Methods: Patients ≥ 12 years, diagnosed with asthma, and receiving ICS alone or in combination with a long-acting β_2 -agonist, were included from a cross-sectional survey of asthma patients in Europe and the US. Clinical characteristics, such as adherence, asthma control, and healthcare utilization, were collected by self- and physician-report. Patients completed the Beliefs about Medicines Questionnaire, adapted for ICS. This is a validated measure consisting of items about treatment necessity beliefs, and concerns, measured on a 5-point Likert Scale, with higher scores indicating higher necessity and higher concerns.

Results: Data from 1337 patients (from 484 physicians) were analyzed. Patients were from Germany (25%), US (21%), France (20%), Spain (16%), Italy (10%) and UK (9%). Most patients had physician-reported mild-intermittent asthma (87%) and mean (SD) age was 40 (15.5) years. There was considerable variation in necessity beliefs ($M = 3.4$, $SD = 0.8$) and concerns ($M = 2.6$, $SD = 0.7$), with 31% of patients reporting low necessity beliefs and 27% reporting high concerns. Patients with doubts about ICS necessity and high concerns had significantly lower self-reported (necessity, $\chi^2(2) = 34.31$, $p < 0.001$; concerns $\chi^2(2) = 20.98$, $p < 0.001$) and physician-reported adherence (necessity, $\chi^2(2) = 11.70$, $p = 0.003$; concerns $\chi^2(2) = 34.45$, $p < 0.001$).

Patients with high necessity beliefs ($F(2, 483) = 3.33$, $p = 0.037$) and high concerns ($F(2, 483) = 23.46$, $p < 0.001$) reported poorer control. A higher number of physician-reported exacerbations in the last 12 months was significantly associated with higher necessity ($F(2, 481) = 4.18$, $p = 0.016$) but not concerns ($F(2, 481) = 2.66$, $p = 0.071$). Physicians reported poorer asthma control in patients with high concerns ($\chi^2(2) = 21.44$, $p < 0.001$), but there was no significant relationship with necessity ($\chi^2(2) = 0.99$, $p = 0.611$). There was no association between beliefs and healthcare utilization. Physician estimates of adherence did not correlate well with patient self-report ($\rho = 0.178$, $p < 0.001$).

Conclusion: ICS necessity beliefs and concerns were associated with self- and physician-reported adherence, asthma control and exacerbations. This has implications for intervention design to optimize ICS adherence. Longitudinal studies using objective adherence and asthma control measures are needed to further explore these relationships.

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WHEN MEDICATION ADHERENCE BECOMES A "WAITING GAME"

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Timely adherence to medications, screenings, and other health services is vital to improving health outcomes. However, complex barriers to adherence (e.g. unemployment, medication availability, insurance) can lead patients to wait to access healthcare. Patients make a variety of trade-offs during waiting periods; some may prioritize basic needs such as food over medication copays, while others may need to forego bill payments in order to continue getting their medications. Experiences of waiting and decisions made during waiting periods are rarely captured in regard to how they affect medication adherence. We analyzed data from a mixed-methods cost-related nonadherence study to examine the experience of waiting for healthcare by people who have difficulty affording medication. Starting in October 2016, people with one or more chronic illness for which they have been prescribed a medication were recruited for a survey ($n=205$) from newspaper ads and federally-qualified health centers. A sub-sample of participants ($n=41$) also participated in an in-depth narrative interview. Field notes and interview transcripts were searched for the word "wait" and for stories related to waiting. 86% of survey participants currently had health coverage and 40% reported having a gap in coverage in the past 12 months. 45% of participants delayed or skipped appointments at least sometimes and 46% reported delaying filling/refilling a prescription because of cost at least sometimes in the past 12 months. Three waiting-related themes emerged from the interviews. 1) People often have to wait to obtain access care, such as waiting to be approved for disability or waiting to turn 65 for Medicare. 2) People make trade-offs while waiting for access, such as delaying treatments or prioritizing some medications, leaving some people anticipating an uncertain future or with feelings of frustration. 3) In the aftermath of waiting, people often expressed relief, but also repercussions from their wait. Our findings suggest that waiting for care was a common experience, distinct from delaying care. Delayed care is often attributed to patient volition, but for many people, waiting is structural and unavoidable. Understanding how people experience and respond to waiting offers researchers, policymakers, and practitioners insight into the challenges of medication adherence. Future research might investigate methods for minimizing and reducing the impacts of wait in the healthcare system.

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BASELINE DAYS WALKING RELATES TO PARENTS' 12-MONTH BIO-VERIFIED CESSATION IN A CHILDREN'S TOBACCO EXPOSURE REDUCTION TRIAL

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Promoting physical activity (PA) in smoking treatment may facilitate smoking behavior change. However, underserved smokers in low-income communities have increased challenges adopting rigorous exercise routines, thus limiting their success in PA+smoking interventions. We conducted secondary analysis of data from a trial designed to help parents protect their children from tobacco smoke, exploring whether routine walking related to long-term smoking outcomes. Trial participants were randomized to 12 weeks of experimental smoking counseling or nutrition education (control) - *neither group* received counseling designed to boost daily walking or exercise. Participants completed the International Physical Activity Questionnaire (IPAQ) at baseline (BL) and 12-month follow-up (12M). A day in which participants reported >15 minutes of walking for the purpose of exercise was considered a walking day. We hypothesized that more days of walking per week and more total time per week of walking would relate to improved 12M smoking outcomes independent of experimental condition.

The study sample (n=254 parents) included 84% females, 84% African Americans and 79% living below the poverty line. Average age = 33.2 (8.5) years old. Participants were relatively inactive at BL, with few walking days/week (M=3.12, SD=3.06); and mean walking days decreased to 12M (M=1.76, SD=2.54 days/week). However, analysis with complete case data showed that BL walking days related positively to 12M bioverified quit status (p=.03) and negatively to 12M cigarettes smoked/day (p=.002). For example, smokers who reported walking 5–7 days/week at BL had higher 12M quit rates than those walking less than 5 days/week (14.6% vs. 6.7%; p=.05). Partial correlation between 12M walking and 12M cigs/day also demonstrated a negative association (p=.015) when controlling for BL walking, treatment condition and other variables associated with smoking outcomes (e.g., nicotine dependence).

Conclusion: Results suggest that greater frequency of daily walking (a low-to-moderate intensity exercise), may be an important baseline characteristic related to long-term quit status among treatment seeking smokers in low-income racial minority communities. Because walking may be a more acceptable and adoptable exercise than higher intensity PA among underserved smokers, future studies targeting this population could examine the utility and potential efficacy of promoting daily walking goals in the context of smoking cessation treatment.

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BLACK WOMEN'S KNOWLEDGE OF MATERNAL BREASTFEEDING BENEFITS FOR CANCER PREVENTION: IMPLICATIONS FOR RESEARCH & PRACTICE

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Background: Breastfeeding has numerous health benefits for both infants and their mothers. Maternal health benefits include postpartum weight loss and decreased likelihood of chronic diseases, namely breast cancer and Type 2 diabetes. Despite improved breastfeeding trends in the U.S., disparities remain, with African-American (Black) women less likely to breastfeed. Compared to their White peers, African-American women of reproductive-age are more likely to be overweight or obese, have Type 2 Diabetes and hypertension, and also more likely to develop triple negative breast cancer. Efforts to increase breastfeeding rates in this population can help improve cancer disparities. Yet, few studies have explored knowledge of cancer prevention in African-American breastfeeding women.

Study Question: How do African-American women with breastfeeding history describe the maternal benefits of breastfeeding for cancer prevention?

Methods: This study employed a secondary data analysis from two studies on breastfeeding in African-American women. For the first study, three focus groups were conducted with 23 Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) breastfeeding peer counselors (12 African-American). The second study consisted of individual interviews conducted with 11 African-American mothers who: were WIC participants, had breastfed 1 child for at

Results: Participants (n=21) were ages 23–46 years, 67% were married and 43% had a college degree. Personal average duration of breastfeeding was 12.6 months, which is higher than national trends. Themes include 1) “*lessens your chance*”-cancer prevention; 2) “*get my shape back*”- postpartum weight loss; 3) “*keep your health up*”-diet & lifestyle changes (ie. exercise, alcohol use, smoking).

Conclusions: Findings indicate that African-American women participating in WIC are aware of the maternal benefits of breastfeeding, namely weight reduction and breast cancer prevention. However, there may be gaps in knowledge about the importance of breastfeeding duration for these benefits. Participants viewed breastfeeding as an opportunity to create or continue healthy behavioral change from pregnancy. Future research should consider using the postpartum and breastfeeding period as an opportunity for multiple behavior change for maternal health promotion and cancer prevention. Given the cancer disparities facing African-American women, healthcare providers should counsel women on the maternal benefits of breastfeeding and the importance of longer breastfeeding durations.

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DEVELOPMENT OF A BRIEF, CULTURALLY-ANCHORED ALCOHOL-REDUCTION AND FAMILY-ENGAGEMENT INTERVENTION FOR FATHERS IN KENYA

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Background: Problem drinking disproportionately affects men with disabling consequences and a cascade of negative effects on families. These problems are often worsened in low and middle-income countries and in areas where patriarchal norms place men in positions of power.

In this study, we developed a family-focused intervention for problem drinking fathers in Kenya anchored in behavioral activation (BA) and motivational interviewing (MI) to reduce alcohol-use and increase male caregiver family involvement.

Methods: Intervention development followed a mixed-method, multi-step process: 1) qualitative data analysis of family functioning and drinking in Kenya; 2) systematic literature review of dual-target alcohol use and family interventions; 3) identification of optimal evidence-based strategies; 4) collaborative development with in-country team; 5) analysis of feasibility indicators from ongoing family therapy intervention trial in Kenya.

Results: We identified three core approaches: BA, MI, and gender transformative strategies (GTS) that we used as the foundation for a 5-session intervention designed to be delivered by community-based lay providers. The functional mechanisms of these approaches remained the same but were modified for context-specific challenges and intervention goals. The intervention begins with MI to encourage engagement and readiness to change. This is followed by BA sessions targeting positive reinforcement to reduce drinking behaviors; MI techniques are integrated throughout to maintain motivation and build efficacy. A family-focus is emphasized throughout; family-related values elicited in MI as reasons for change (e.g., don't want child to drink), and clarified in BA (e.g., be a good father), drive motivation building and activity scheduling (e.g., help child with homework). This was tailored to account for context-specific family dynamics that place importance on role fulfillment (e.g., provider). Gender transformative approaches are integrated to expand traditional conceptualizations of masculinity to include care/nurturance. This is designed to increase motivation for completing family activities and reducing drinking.

Conclusions: Evidence-based MI and BA strategies are amenable to leveraging culturally-anchored values and goals to target both alcohol use and family involvement, as well as to being streamlined for implementation by lay providers.

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EFFECTS OF A 12-WEEK EXERCISE AND LIFESTYLE INTERVENTION ON BEHAVIOURAL & PSYCHOSOCIAL OUTCOMES FOR ADULTS WITH CELIAC DISEASE

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Background: Celiac disease is a chronic autoimmune condition that requires strict adherence to a gluten-free diet (GFD) to prevent detrimental consequences (e.g., intestinal cancers, osteoporosis¹). Following a strict GFD alone is often not sufficient to effectively manage the disease,² and can be associated with detrimental outcomes including reduced quality of life (QoL)³. Given the established psychosocial benefits of regular engagement in exercise among chronic disease populations⁴, inactive adults with celiac disease may particularly benefit from an exercise and lifestyle targeted program.

Purpose: The purpose of this pilot study was to explore the effects of a 12-week supervised progressive high intensity interval training (HIIT) and lifestyle intervention on behavioural and psychosocial outcomes among inactive adults with celiac disease.

Methods: Thirty-three inactive adults diagnosed with celiac disease ($M_{age} = 45.5$, 88% female) were randomized to intervention (HIIT; $n = 16$) or waitlist control (WLC; $n = 17$). Participants in the intervention engaged in a 12-week HIIT + lifestyle education program. HIIT was comprised of 2 workouts per week, working up to 14, 30-second intervals at 90% heart rate max followed by 2 minutes recovery at 50% heart rate max. The lifestyle component included education on the promotion of a whole foods GFD, sleep hygiene, and psychosocial coping skills (e.g., self-compassion). Assessments occurred at pre and post 12-week intervention and 3-month follow-up. WLC participants were offered a 12-week HIIT program after completing the final assessment.

Results: From pre-post intervention, participants in the intervention (HIIT + lifestyle, $M_{attendance} = 72\%$; range 58–83%) reported significant improvements in adherence to a GFD ($M_{change} = -2.25$; $t(7) = -2.35$, $p = .05$, $d = 1.03$), whereas no significant change in adherence to a GFD was reported among those in WLC ($M_{change} = -0.65$; $t(9) = -0.58$, $p = .58$). Furthermore, pre-post intervention a medium effect size improvement in self-compassion was reported for those in the intervention ($M_{change} = 0.27$; $t(7) = 1.27$, $p = .24$, $d = 0.64$) versus significant worsening of self-compassion in WLC ($M_{change} = -0.25$; $t(9) = 2.34$, $p = .04$, $d = 0.75$). Finally, QoL was maintained in the intervention group ($M_{change} = 0.02$; $t(7) = 0.06$, $p = .95$) whereas WLC reported significant worsening of QoL ($M_{change} = -0.56$; $t(9) = -2.22$, $p = .05$, $d = 0.68$) from pre-post intervention.

Conclusion: Participation in the HIIT and lifestyle intervention was associated with improvements in adherence to a GFD and self-compassion and maintenance of QoL.

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EFFECTS OF A LIFESTYLE INTERVENTION ON EXERCISE & DIETARY BEHAVIOR IN PROSTATE CANCER PATIENTS ON ANDROGEN DEPRIVATION THERAPY

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Emerging evidence suggests lifestyle exercise and dietary interventions (EX+D) can attenuate, or even reverse, primary adverse effects of androgen deprivation therapy (ADT) among prostate cancer (PCa) patients. However, challenges in successfully maintaining EX+D behavior change can undermine the efficacy of lifestyle interventions in the supportive care of PCa. The purpose of the single-blind, randomized controlled Individualized Diet and Exercise Adherence-Pilot (IDEA-P) trial was to evaluate the preliminary efficacy of a lifestyle EX+D intervention, implementing a group-mediated cognitive behavioral (GMCB) approach targeting the development and practice of behavioral self-regulatory skills necessary for independent maintenance of EX+D behavior, relative to standard of care (SC) treatment among PCa patients undergoing ADT. In the current study, we evaluated the effects of the EX+D and SC interventions upon select EX+D behavior outcomes. A total of 32 PCa patients (*M* age = 65 years) on ADT were randomly assigned to EX+D (*n* = 16) or SC (*n* = 16) interventions. Measures of objectively-determined and self-reported physical activity and self-reported dietary intake were obtained at baseline and 2 and 3 month follow-up assessments. Results of intention to treat 2 (Treatment) x 2 (Time) ANCOVA analysis of residualized change scores revealed significant Treatment effects for select physical activity ($p < 0.01$) and dietary intake measures ($p < 0.05$). Post hoc analysis demonstrated the EX+D resulted in increased resistance exercise participation ($d = 1.56$), total volume of physical activity ($d = .65$), and fruit and vegetable intake ($d = 1.04$) as well as decreased consumption of refined grains ($d = .49$) and sugar-sweetened beverages ($d = .44$) relative to SC. Findings from the IDEA-P trial suggest that the GMCB EX+D intervention resulted in more favorable changes in select physical activity and dietary behavior outcomes that were independently maintained at 3 month follow-up. These results underscore the utility of promoting change in EX+D behavior in the supportive care of PCa patients undergoing ADT.

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EXTENDING OUR REACH IN AFRICAN AMERICAN CHURCHES: PERCEPTIONS OF DYADIC PEER SUPPORT TO PROMOTE HEALTHY WEIGHT

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Background: African Americans suffer from a disproportionate burden of obesity and obesity-related chronic disease. African American churches are popular places to implement obesity prevention programs. Although programs in churches have achieved positive outcomes, gains are often small and sustainability is lacking. Multiple studies have shown the benefit of dyadic support (i.e., two people working together), in achieving weight loss. However, interventions in African American churches have not used dyadic support specifically to optimize their efforts to combat obesity.

Objectives: The aim of this preliminary study was to explore church members' and county health educators' perceptions of using dyadic support to promote healthy weight in African American churches to inform the development of a dyad support intervention to augment an existing obesity prevention intervention.

Research Design: Recruited were ten congregant members from five congregations in North Carolina and four of the nine state health education coordinators who implement obesity prevention programs. This descriptive study used semi-structured qualitative interviews (i.e., What do you think about pairing up church member as part of a wellness program?). Interviews were analyzed using conventional qualitative content analysis to identify keywords and themes across cases.

Results: Five common themes emerged from the interviews: pairing up members is natural and can help achieve health goals; members want to help and be helped by other members; attitude and motivation are the most important considerations for pairing up members; dyad activities should be structured; and dyad activities should include goal setting, meeting for exercise and checking in at least twice per week.

Conclusion: Because of strong ties and relationships, the church is fertile ground for a dyad support intervention; interviewees emphasized lack of personal motivation over structural determinants as barriers to better health and felt a partner might help overcome this challenge. Members will work well with any other member of the church "family", but ensuring similar levels of motivation may be important to assess and use as a way to pair up partners. In terms of a dyadic support intervention, before engaging in any activities, dyad partners should be assisted in setting goals and thinking of strategies to attain them; and be encouraged to communicate and interact with one another consistently and frequently. The eagerness of African American church members to engage with a partner to achieve healthy weight supports implementing a dyadic support intervention in African American churches; adding this component may ultimately improve effectiveness and sustainability of obesity prevention programs.

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FACTORS ASSOCIATED WITH CLUSTERING OF HEALTH-RELATED BEHAVIORS AMONGST EMERGING ADULTS IN TAIWAN

Shu-Fang Shih, Ph.D.¹, Yu-Tso Yeh, MEd.²¹National Taiwan Normal University, Taipei, Taipei, Taiwan (Republic of China); ²National Taiwan University Hospital, Taipei, Taipei, Taiwan (Republic of China)**Objectives:** To investigate factors associated with the types of health-related behavior cluster amongst emerging adults aged 18–25 in Taiwan.**Methods:** This study used the 2009 National Health Interview Survey data, and the research subjects were emerging adults aged between 18–25 years old. A multinomial logistic regression was adopted for analyzing the association between the sociodemographic variables and the types of health-related behavior cluster, including “smoking and drinking,” “unbalanced diets,” and “health-conscious.”**Results:** Compared with the health-conscious cluster, the smoking- and drinking clusters mostly comprised of men who were married, non-students, residents of low-income regions, and those who earned a high income; by contrast, the unbalanced diet cluster mostly comprised of women who were in their late teens, residing in more affluent areas, and whose incomes ranged up to NTS20,000.**Conclusions:** Emerging adulthood is a critical turning point from adolescence to adulthood, and the health problems of these emerging adults have now become an important issue. By analyzing the factors associated with the types of health-related behavior cluster rather than with the single unhealthy behaviors, the significant factors have now provided us with the relevant evidence for designing a tailored-made health promotion program. The health promotion practitioners should be encouraged to adopt a more holistic approach to understand the underlying factors associated with the overall picture of the lifestyle of one person, rather than using a simplified approach which targets only one single unhealthy behavior, so that the effectiveness of the health promotion program could be enhanced.

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FEASIBILITY AND EFFICACY OF A LIFESTYLE INTERVENTION FOR RURAL-LIVING, LATE-MIDLIFE HISPANICS WITHIN A PRIMARY CARE CONTEXT.

Stacey L. Schepens Niemiec, California¹, Jeanine Blanchard, PhD, OTR/L², Cheryl Vigen, PhD², Jenny Martínez, OTD, OTR/L, BCG², Laura Guzmán, California³, Alyssa Concha, OTD, OTR/L⁴, Michelle Fluke, MBA⁵, Hector Balcazar, MS, PhD⁶, Mike Carlson, PhD¹¹University of Southern California Chan Division of Occupational Science and Occupational Therapy, Los Angeles, CA; ²University of Southern California, Los Angeles, CA; ³University of Southern California Chan Division of Occupational Science and Occupational Therapy, La Quinta, CA; ⁴USC Chan Division of Occupational Science and Occupational Therapy, Phoenix, AZ; ⁵Antelope Valley Partners for Health, Lancaster, CA; ⁶Charles R. Drew University of Medicine and Science, Los Angeles, CADespite the comparative mortality advantage that Hispanics have over non-Hispanic whites, the prevalence of chronic health problems and early-onset disability is substantially higher in this minority group. Exacerbating these inequities, Hispanics living in rural communities are vulnerable to the consequences of limited access to healthcare services. The purpose of this study was to evaluate the feasibility of *¡Vivir Mi Vida!* (VMV), a culturally tailored lifestyle intervention co-led by community health workers (CHWs) and occupational therapists (OTs) and designed for late-midlife Hispanic patients receiving primary care services.Forty Hispanic, Spanish-speaking 50- to 64-years-old participants were recruited from a primary care clinic in the Antelope Valley of California. Pilot tested as a 4-month program, VMV was adapted for rural-based implementation and included in-home visitations with a CHW and telehealth OT consultations. The program targeted a wide array of health challenges by focusing on personally meaningful social, physical, and productive activity. Information collected from patients' electronic medical records was used to help guide treatment. Subjective health, cardiometabolic measures, and health behaviors were collected pre- and post-intervention; pre-post change scores were analyzed using paired sample *t*-tests or Wilcoxon signed rank tests. Participants and key stakeholders (e.g., interveners, clinic leadership) also participated in follow-up interviews and focus groups.Adherence averaged 77% for individual, group, and telephone check-in sessions. Of those who completed post-testing (n=37; 93%), most were female (91%), born in Mexico (65%), US residents for 20+ years (78%), not employed (76%), and non-smokers (100%). Sixty-eight percent had ≥2 comorbidities. Participants demonstrated significant pre-post improvements in impact of symptoms on daily activity ($p=.008$), systolic blood pressure ($p=.006$), sodium ($p=.0001$) and saturated fat ($pp=.02$) and social role satisfaction ($p=.001$). Physical activity engagement and weight did not change ($p>.05$). Although participants were extremely satisfied with the program, stakeholders identified a number of implementation challenges.

The findings suggest that a tailored lifestyle intervention led by CHWs and OTs is feasible and can improve health outcomes in rural-dwelling, late-midlife Hispanics, despite implementation challenges faced.

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IS KNOWLEDGE REGARDING THE DANGERS OF CONTRACTING BRUCellosIS ASSOCIATED WITH RISKY BEHAVIOR AMONG ARAB ISRAELIS?

Shiran Bord, MPH, PhD¹, Samira Obeid, RN, MPH, PhD², Michal Cohen-Dar, MD³, Orna Baron-Epel, PhD MPH⁴¹University of Haifa and The Max Stern Yezreel Valley College, Haifa, N/A, Israel; ²The Max Stern Yezreel Valley College, Maker village, Hefa, Israel; ³Ministry of Health, Nazereth, HaZafon, Israel; ⁴University of Haifa, Haifa, N/A, Israel**Background:** Outbreaks of brucellosis occurred in the last few years in specific communities among Arab Israelis. This disease is caused mainly by consumption of dairy products made of non-pasteurized milk from infected animals and is common in these communities.**Objectives:** To learn from where do Arab Israelis attain their information regarding brucellosis and is this information associated with consumption of non-pasteurized milk and cheese and reported outbreaks.**Methods:** A telephone survey of 306 respondents from five Arab towns in the northern part of Israel, three towns with and two without reported outbreaks of brucellosis. The questionnaire included questions regarding knowledge, source of knowledge, patterns of purchase and consumption of non-pasteurized dairy products.**Results:** In towns that had outbreaks of brucellosis over 90% of the respondents heard of brucellosis compared to only 56% in the towns without outbreaks. The level of knowledge of the respondents was high, over 60% answered correctly 4–5 questions out of five. In all towns around 30% of respondents reported hearing about the disease from the media. In the towns with outbreaks over 60% of respondents reported hearing about the disease from their social networks, whereas in the other towns only 23% heard about it from social networks. However, knowledge was not associated with consumption of dairy products made of non-pasteurized milk.**Conclusions:** Levels of knowledge did not prevent risky consumption of dairy products. Most of the information received by the residents from the various sources seem not to have had an effect on behavior.

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MULTIPLE HEALTH BEHAVIORS ENGAGEMENT AMONG AFRICAN AMERICANS: CLUSTERING PATTERNS AND CORRELATES

Dalnim Cho, PhD¹, Nga Nguyen, MS¹, David W. Wetter, Ph.D.², Lorna McNeill, PhD, MPH¹¹UT Texas MD Anderson Cancer Center, Houston, TX; ²University of Utah/Huntsman Cancer Institute, Salt Lake City, UTEngaging in multiple health behaviors (MHBs) simultaneously has health and economic advantages over engaging in single health behaviors (Levi et al., 2008; Loprinzi, 2015). However, MHBs research including racial/ethnic minorities is noticeably absent (Noble et al., 2015). We examined class clustering patterns (class membership) of four behaviors—physical activity (PA), fruit & vegetable (FV) intake, smoking, and alcohol use—in a church-based African American (AA) cohort. Guided by socio-ecological models (McLeroy, 1988), we also examined what psychosocial (e.g. stress, cancer risk perception, social support, social norms) and neighborhood factors (e.g. social cohesion, neighborhood problems) are associated with the class membership (after controlling for demographics). A total of 1,467 AA adults in a large church in the Houston metropolitan area were analyzed. Latent Class Analysis showed that a 3-class model (sBIC=10137.93) is preferable to 2-Class (sBIC=10142.74) and 4-class models (sBIC=10155.05). Class 1 is characterized as not being physically active, not eating FV, and not smoking and drinking alcohol. Class 2 is characterized as being physically active, not eating FV, having smoking history and drinking mildly. Class 3 is the healthiest group, characterized as being physically active, eating many FV, and not smoking and drinking alcohol. The probability of being included in Class 1, 2, and 3 was .33, .48, and .19, respectively. Multinomial regression analysis showed that compared to participants in Class 3, those in Class 1 reported lower PA norm (i.e. reported fewer number of significant others engage in PA; $b=-.64$, 95% CI=-.96, -.31) and higher smoking norm (i.e. reported more number of significant others smoke; $b=.50$, 95% CI=.19, .81), and lower neighborhood social cohesion ($b=-.06$, 95% CI=-.11, -.00). Compared to participants in Class 3, those in Class 2 reported higher cancer risk perception ($b=.26$, 95% CI=.12, .41), lower FV norm (i.e. reported fewer number of significant others eat FV; $b=-.29$, 95% CI=-.54, -.04), lower PA norm ($b=-.57$, 95% CI=-.87, -.28), and higher smoking norm ($b=.57$, 95% CI=.29, .85). The utilization of socio-ecological models in MHBs research is supported. As participants in the healthiest group commonly reported higher positive social norms for health behaviors compared to those in the two unhealthier groups, MHBs interventions in this population should enhance social norms. Given the synergistic impacts of MHBs on health (Loprinzi, 2015), MHBs research greatly needs to focus on AAs to reduce the known health disparities (NCHS, 2016; Siegel et al., 2016).

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ASSOCIATION OF PSYCHOSOCIAL AND INFORMATION PROCESSING VARIABLES WITH WEIGHT LOSS IN A 6-MONTH BEHAVIORAL HEALTH INTERVENTION

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Objective: To assess psychosocial and information processing predictors of weight loss in a 6-month, mobile health (mHealth) weight loss intervention comparing two different mobile dietary self-monitoring devices.

Methods: The DIET Mobile study was a remotely-delivered 6-month randomized weight loss trial. Participants (n=81, mean BMI=34.7 ± 5.6 kg/m²) were randomized to self-monitor their diet with either a mobile app or wearable Bite Counter device. Participants received twice weekly podcasts based on Social Cognitive Theory from the Diabetes Prevention Program.

Measurements were assessed at baseline and 6 months and included weight (digital scale) and 5 psychosocial and information processing variables (self-report questionnaires). Psychosocial measures included *self-efficacy* (assessed with the Weight Efficacy Lifestyle Questionnaire, a 20-item scale with 5 situational factors: Negative Emotions, Social Pressure, Availability, Physical Discomfort, and Positive Activities). Information processing variables included *elaboration*, which focuses on persuasion and attitude change (assessed with the Elaboration Likelihood Model Questionnaire), *user control*, which focuses on the amount of control participants felt during the study (assessed with a 3-item Likert scale), *cognitive load*, which focuses on the mental burden participants felt during the study (assessed with a 2-item Likert scale), and *novelty*, which is how new, innovative, and unusual participants found the intervention (assessed with a 2-item Likert scale). These information processing variables were used in our previous research and were significant mediators of weight loss.

Both groups from the intervention were combined and only complete cases were analyzed, resulting in (n=52) participants included in analyses. A General Linear Model that included all psychosocial/information processing variables was conducted to see which variables best predicted % weight loss at 6 months.

Results: Participants lost a mean of -5.4 ± 6.1% body weight. Positive activities related to self-efficacy (F=5.4, P=0.03) and elaboration (F=8.3, P

Conclusions: This study highlights aspects of both self-efficacy (positive activities) and information processing (elaboration) that are important to target in future mHealth weight loss interventions.

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CHILD'S CORTISOL LEVEL MEDIATES RELATIONSHIP BETWEEN MOTHER'S STRESSFUL LIFE EVENTS AND CHILD'S WAIST TO HEIGHT RATIO

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BACKGROUND: Childhood obesity in the United States continues to be a major public health concern. One such factor associated with children's obesity risk is their mothers' psychosocial stress. Past literature have proposed a possible pathway of parental stress affecting child's stress, which in turn increases the child's risk of obesity. However, limited findings on this topic are mixed, most likely due to the lack of longitudinal data and the shortcomings of subjective measures of stress. This study utilized a mediation model to examine the relationship between mothers' stressful life events (SLE), children's cortisol level, and children's waist to height ratio in a longitudinal study.

METHODS: The sample consisted of 116 mothers and their children who were enrolled in the Mothers and their Children Health (MATCH) Study between 2015 and 2017. At baseline, mothers reported their SLE that had occurred during the past 6 months. At the 6 month time point, children collected saliva samples over four days, which were used to calculate the average diurnal cortisol slope (DCS). Then at the 12 month time point, children had their height and waist circumference recorded by trained staff in the lab. Analysis investigated whether the association between mother's SLE and child's waist to height ratio (WHtR) is mediated by child's DCS, controlling for mother's education, child's age, sex, and pubertal development.

RESULTS: Results indicated that child's DCS mediated the longitudinal relationship between mother's SLE and child's WHtR. Mother's SLE was modestly associated with child's WHtR ($\beta = 0.15, p = 0.08$) and positively associated with DCS ($\beta = 0.29, p < 0.01$). Child's DCS was also positively associated with WHtR ($\beta = 0.20, p < 0.05$). Once adjusted for the mediator (child's DCS), mother's SLE was no longer significantly associated with child's WHtR ($\beta = 0.10, p = 0.27$). This mediation effect was supported by the bootstrapping confidence intervals derived from 5000 samples.

CONCLUSION: These findings illustrate the potential role of child's cortisol level in mediating the longitudinal effect of mother's life events on children's adiposity. Future studies should consider how parental stress can affect a child's biological stress response and risk of obesity.

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ENGAGEMENT AND WEIGHT LOSSES AMONG EMERGING ADULTS: DO OUTCOMES VARY BY RACE?

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Background: More than 40% of emerging adults (EA) meet criteria for overweight (OW) or obesity (OB) with prevalence exceeding 50% among minority EA. Despite increased risk, relatively few trials have targeted this population and even fewer have enrolled a racially diverse sample of EA. Moreover, weight losses achieved by this population are poor relative to other age groups, but whether disparities in outcomes exist by race among EA is unknown. Thus, the goal of the present study was to examine engagement and weight loss outcomes by race in a sample of EA enrolled in a behavioral weight loss (BWL) intervention.

Methods: Data were drawn from an ongoing randomized controlled trial targeting EA 18–25 years of age for weight loss. Participants (N=184, 60% racial / ethnic minority, BMI=33.2, 21% student, 36% non-student working, 41% work and school) were randomized to one of three arms and received a 6-month technology mediated BWL intervention matched on contact. Objective assessments of weight and anthropometrics were completed at 0, 3 and 6 months with continuous objective capture of engagement data via Bluetooth connected scales and self-monitoring app. For the purposes of the present analysis, data were collapsed across treatment arm, with arm included as a covariate in models. Weight losses and engagement across the initial 3 months of the program were examined by race / ethnicity; race was treated as a dichotomous variable comparing non-Hispanic White (NHW) vs. minority participants.

Results: Retention at 3 months was 91% and did not vary by race / ethnicity ($p=.41$). Engagement did not differ by race / ethnicity ($p=.20$). However, weight losses at 3 months were significantly better for NHW participants compared with minority participants and variability was quite high in both groups ($-3.5 \pm 4.3\text{kg}$ vs. $-2.1 \pm 4.0\text{kg}$, $p=.02$).

Conclusion: Results suggest that similar to adults, weight loss outcomes vary by race among emerging adults, although the differences are attenuated relative to previous reports in other age groups. Of note, differences in engagement were not observed, which suggests that there might be other factors contributing to differential weight loss outcomes. Given modest weight losses and high variability among this population overall, efforts to improve outcomes are sorely needed, particularly among minority EA. Findings are discussed in terms of implications for future work.

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GOHEALTHYSCI: PILOT TESTING A WEIGHT MANAGEMENT PROGRAM FOR PEOPLE WITH SPINAL CORD INJURY

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People with disabilities face multiple barriers to successful weight management. With input from community advisors and building upon GoWoman, an online intervention for women with mobility limitations, we developed and pilot tested GoHealthySCI, a group, peer-facilitated weight management program adapted for people with spinal cord injury (SCI). GoHealthySCI consists of 16 weekly group sessions using video teleconferencing with monthly in-person sessions, followed by 2 months of tapered sessions. Overweight or obese individuals with SCI were randomly assigned to the intervention or a control group that received materials at the end of the study. Of the 36 initially enrolled, 27 completed the post-test (14 intervention, 13 control; 25% attrition). The sample was 78% white, 59% non-Hispanic, 63% male, and predominantly middle-aged (*Mean* age=41.85, *SD*=13.18). Most had paraplegia (59%) and had been living with their injury for many years (*Mean*=19.89 years, *SD*=15.52). Preliminary evidence supports efficacy with intervention participants losing 8.07 (7.11) pounds over 16 weeks compared to 1.35 (7.87) pounds in controls (Cohen's $d=0.90$). Intervention participants also had a greater reduction in waist circumference (WC) than controls (1.67 [2.94] versus 0.24 [2.52], Cohen's $d=.52$). Weight loss was greater among men than women in the program (10.0 [8.51] versus 5.50 [4.0], Cohen's $d=.67$) but WC reduction was greater among women (2.72 [3.77] versus .89 [2.01], Cohen's $d=.60$). In terms of engagement, 4 intervention participants dropped within the first 2 weeks due to family/work conflicts or health issues. The remaining 14 participants attended 12.93 (1.9) of the 16 sessions on average. Program ratings strongly support the acceptability of the program, with 100% rating the program as good (21%) or excellent (79%), and 100% 'definitely' recommending the program. All reported making 'important' (93%) or 'minor' (7%) positive dietary changes, and all reported making 'important' (71%) or 'minor' (29%) changes in physical activity. In addition, 43% reported meeting or exceeding their weight loss goal, with 29% reporting good progress toward their goal. Perceived support in the predominantly online program was strong, with 100% describing that they felt supported by facilitators and fellow group members and 86% describing facilitators as 'very effective.' Results provide preliminary evidence of the feasibility, acceptability, and efficacy of the GoHealthySCI program.

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HEDONIC HUNGER AS POTENTIAL BARRIER TO SUCCESS IN BEHAVIORAL WEIGHT LOSS

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Introduction: Research has demonstrated that individuals with overweight and obese BMIs may have an increased sensitivity to high-calorie, non-nutritious food, and may experience more intense cravings than individuals with normal weight BMIs, even when the food is not readily available. This susceptibility to environmental food cues in the absence of an actual caloric deficit is called hedonic hunger, and at high levels hedonic hunger can be indicative of unhealthy eating behaviors. Little research has examined hedonic hunger as a dynamic trait to determine if hedonic hunger changes during the course of behavioral weight loss (BWL) treatment. It also is unknown how changes in hedonic hunger, eating behavior, and weight are related. The goals of this study were to 1) assess the relationship between hedonic hunger and eating behavior throughout BWL treatment, and 2) determine if changes in hedonic hunger predict weight loss.

Methods: Adults with overweight or obese BMIs ($n = 320$) enrolled in a BWL treatment and completed assessments at baseline and 6 months, which included weight measurement and the Power of Food Scale (PFS), a self-report measure of an individual's sensitivity to food cues in the environment. Additional measurements taken during treatment included participant's self-reported calorie intake, used to calculate adherence to weekly calorie goals.

Results: On average, PFS scores did not significantly change between baseline and 6 months ($p > 0.05$). However, change in PFS scores between baseline and 6 months significantly predicted percent weight loss at 6 months ($p < .05$), such that higher PFS at baseline predicted lower adherence to calorie goals throughout treatment.

Conclusions: These results provide further evidence to suggest that hedonic hunger is related to eating behavior and weight loss in important ways. Experimental research is warranted to determine if providing specific strategies for regulating hedonic hunger could result in improved treatment outcome by decreasing sensitivity to environmental food cues.

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IMPACT OF WEIGHT LOSS AND WEIGHT-LOSS MAINTENANCE ON CELL AGING IN ADULTS WITH OBESITY: RESULTS FROM THE SHINE STUDY

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Objective: Higher body mass index (BMI) has been associated with shorter leukocyte telomere length (TL), a biomarker that predicts early mortality from diseases of aging. However, no studies have examined whether behavioral weight-loss interventions can attenuate TL shortening. Here we determined the impact of a mindfulness-based weight-loss intervention on TL and the association between weight-loss maintenance and change in TL.

Methods: Adults ($N=194$) with a BMI between 30 and 45 were randomized to a 5.5-month weight-loss program that included diet-exercise guidelines. Half of the sample ($n=100$) was randomized to receive mindfulness training in addition to the weight-loss program, and half of the sample ($n=94$) was randomized to receive the weight-loss program only. We assessed TL at baseline and 3, 6, and 12 months post-baseline in immune cell populations, including peripheral blood mononuclear cells [PBMCs] and granulocytes. We defined weight-loss maintenance as having lost at least 5% or 10% (tested in separate models) of body weight from pre- to post-intervention and maintenance of this loss at 12 months. We predicted that greater weight loss and weight-loss maintenance would be associated with longer TL.

Results: There was no effect of group randomization (mindfulness versus weight-loss program only), or amount of weight loss, at any time point, on change in TL. Regardless of intervention group, at 12 months, weight-loss maintenance of at least 10% (relative to lack of such weight-loss maintenance) was associated with longer PBMC TL ($b=0.10$, 95% CI [0.00, 0.19], $p=.049$), and trended toward an association with longer granulocyte TL ($b=191.56$, 95% CI [-4.23, 387.35], $p=.055$), after accounting for baseline TL. Similarly, at 12 months, weight-loss maintenance of 5% or greater (relative to lack of such weight loss and maintenance) was associated with longer PBMC TL ($b=163.32$, 95% CI 4.00, 320.62], $p=.045$) after accounting for baseline TL.

Conclusions: Among individuals with obesity, losing and maintaining a weight-loss of 10% or greater may lead to longer TL, which may portend improved immune and metabolic function. Notably, the increased TL in this study is of unknown duration beyond 12 months, and requires further study.

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OBESITY PREVENTION PROGRAM WITH FOCUS ON EATING DISORDERS: 12-MONTH IMPACT OF THE 'HEALTHY HABITS, HEALTHY GIRLS - BRAZIL'

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Background: With the increasing prevalence of pediatric obesity, there has been a parallel increase in the prevalence of "dysfunctional eating practices", including eating disorders (ED) and unhealthy weight control behaviors. Therefore, integrated intervention strategies that address both obesity and ED may minimize these interrelated public health concerns among adolescents.

Objective: To evaluate the long-term (12-month) effects of a Brazilian school-based intervention for girls targeting shared risk factors for obesity and ED.

Methods: A total of 253 girls, mean of 15.6 (0.05) years of age, from 1st to 3rd grade in 10 high schools (i.e., 5 pairs) participated in a 6-month school-based cluster randomized controlled trial. "Healthy Habits, Healthy Girls – Brazil (H3G-Brazil)", originally developed in Australia, emphasized 10 key nutrition and physical activity (PA) messages delivered over 6 months. ED prevention procedures were added to the intervention. Body satisfaction, unhealthy weight control behaviors and social cognitive variables of diet and physical activity were assessed at baseline, 6-month, and 12-month follow-up. Intervention effects were determined by one-way analysis of covariance or logistic regression, after checking for the clustering effects of school. The significance level was set at $p \geq 0.01$.

Results: Beneficial effects were detected for PA social support ($F=6.005$, $p=0.01$) and healthy eating strategies ($F=6.08$, $p=0.01$) at 6 months and healthy eating social support ($F=14.731$, $p=0.00$) and healthy eating strategies ($F=5.812$, $p=0.01$) at 12 months. The intervention group was more likely to report unhealthy weight control behaviors ($OR=1.92$, 95%CI 1.15 to 3.21, $p=0.01$) 12 months after baseline. No other significant 6- or 12-month effects were detected.

Conclusion: H3G-Brazil demonstrated positive 12-month effects on social cognitive variables, but an adverse effect on unhealthy weight control behaviors. Further work is needed to understand why this occurred and to enhance the effectiveness of H3G-Brazil for prevention of obesity and ED among girls.

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PSYCHOSOCIAL ADJUSTMENT MEDIATES EFFECTS OF CHILDHOOD MATERNAL AND PEER SUPPORT ON BMI IN ADOLESCENTS

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Background/Aims: We used a secondary dataset from the National Institute of Child Health and Development Study of Early Child Care and Youth Development (SECCYD) to examine mediation effects of psychosocial adjustment on the impact of accumulative and dynamic experience of maternal and peer support throughout childhood and early adolescence (from age 1 month to 11 years old) on later body mass index (BMI) in middle adolescence (age 15).

Method: The analysis sample included 844 children and their families. Maternal and peer positive support were repeatedly assessed from child's age 1 month to grade 5. Both cumulative scores and mobility measures were created to capture the accumulative and dynamic aspects of experience of support across time, which were further used to prospectively link to child's BMI at age 15. Average scores of repeated assessments of internalizing and externalizing behavioral problems from grade 3 to grade 6 were calculated to reflect psychosocial adjustment and were used as the mediators. Mediation analyses were carried out with the PROCESS macro which enabled to generate a bias-corrected bootstrapped 95% confidence intervals for indirect effects.

Results: Significant mediations of internalizing behavioral problems were observed on pathways from accumulative and dynamic aspects of positive support from mother (mediation for accumulative aspect = -0.046, 95% CI of -0.082 - -.015; for dynamic aspect = -0.17, 95% CI of -0.35 - -.031) and peers (mediation for accumulative aspect = -0.077, 95% CI of -0.14 - -.023; for dynamic aspect = -0.14, 95% CI of -0.31 - -.019) to later BMI at age 15. Similar findings on the mediations of externalizing behavioral problems were also observed for maternal (mediation for accumulative aspect = -0.077, 95% CI of -0.12 - -.042; for dynamic aspect = -0.094, 95% CI of -0.27 - -.076) and peer positive support (mediation for accumulative aspect = -0.16, 95% CI of -0.25 - -.089; for dynamic aspect = -0.16, 95% CI of -0.33 - -.018). Moderated mediation models between genders revealed the significant mediations of either internalizing or externalizing behavioral problems were mainly sustained with pronounced magnitudes in girls but not in boys.

Conclusion: Our findings demonstrated a significant mediating role of psychosocial adjustment. Future research efforts are highly encouraged to replicate our findings and further explore this underlying mediation mechanism.

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RELATIONS BETWEEN WEIGHT-BASED TEASING, SELF-COMPASSION, AND EATING PATHOLOGY IN UNDERGRADUATE WOMEN

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Weight stigma, including weight-based teasing (WBT), or negative commentary from others regarding one's weight, contributes to eating disorder (ED)-related symptoms including binge and emotional eating (EE) and compensatory behaviors, purportedly because of the effect of WBT on negative self-evaluation, internalized weight bias, and increased stress and negative emotions (Vartanian & Porter, 2016; Tomiyama, 2014). Self-compassion (SC) is inversely associated with negative self-evaluation, and reflects the capacity to extend kindness to oneself, view one's suffering as a shared human experience, and hold a balanced awareness of one's experiences (Neff, 2003). SC is inversely associated with eating pathology and positively associated with body acceptance, and it partially explains the association between evaluation-based ED risk factors (e.g., body surveillance, external shame) and ED symptoms (Ferreira et al., 2013; Liss & Erchull, 2015; Taylor, Daiss & Krietsch, 2015; Dalen et al., 2015). Given preliminary evidence for an inverse association between WBT and SC (Robbins, Yeh & Goldbacher, 2017), it is plausible that SC may help explain the association between WBT and ED symptoms.

This study used bootstrapping to test whether SC (Self Compassion Scale; Neff, 2003) mediated the relation between frequency of WBT (Perception of Teasing Scale; Thompson et al., 1995) and both a general measure of ED-related symptoms (Eating Attitudes Test-26; Garner, Olmsted, Bohr & Garfinkel, 1982) and a specific measure of EE (Emotional Eating Scale; Arnow, Kenardy & Agras, 1995) in 142 female undergraduate students (M age = 20.37(5.04) years). Results demonstrated a significant indirect effect of WBT on ED symptomatology through SC ($b = .13$, BC CI = .05, .24). The direct effect of WBT on ED symptoms remained significant ($b = .46$, $p < .001$), consistent with partial mediation. Regarding EE, WBT was inversely associated with SC ($r = -.24$, $p = .003$), and SC was negatively associated with EE ($r = -.18$, $p = .04$); however, there was no significant direct ($b = .11$, $p = .65$) or indirect effect ($b = .11$, BC CI = -.02, .26) of WBT on EE. These results suggest that SC may help explain the association between WBT and general ED symptoms in college women, and that increasing SC could be one potential way of mitigating the effects of WBT on ED pathology. Clinical implications, associations with specific dimensions of ED symptoms, and future directions will be discussed.

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SMALL-CHANGE BEHAVIOURAL INTERVENTION APPROACHES TO WEIGHT LOSS: A SYSTEMATIC REVIEW

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Rates of overweight and obesity continue to rise in North America and worldwide. Traditional behavioral interventions geared at weight loss have demonstrated success in producing initial weight loss through large changes to caloric intake and physical activity. Although these changes result in steep initial weight loss, one continued problem for researchers and individuals alike is weight loss maintenance post-treatment. A novel approach to weight loss, a small changes approach, encourages participants to make modest changes to diet and activity. Theoretically, these small changes are enough to affect overall energy balance without requiring major lifestyle changes that are overly taxing to maintain long-term. Since the initial introduction of the small changes treatment paradigm, several studies have been conducted in an attempt to develop empirical support for this approach. The objective of the present review is to map the extant literature on this novel approach to weight loss. The present review, identified 12 articles that assessed 1720 participants. Although there was noted variability across the definition and application of the small changes approach, there were several common and defining features noted. The primary focus across multiple studies was that the goals for each participant were *modest* and *self-selected*. For a majority of the reviewed articles, small changes were successfully accumulated across the intervention phase to produce initial modest weight loss. Greatest data is available for 3- and 12- month assessments. Mean weight loss across 3- and 12-month assessments were -2.5kg and -2.96kg, respectively. Findings from this review also indicate that the small changes approach has demonstrated its ability to achieve initial weight loss with no study demonstrating weight regain greater than 50% across assessments through 12 months and 24 months. However, considerable variability in the application of the intervention exists. In order to gain an accurate picture of the small changes approach, researchers and clinicians developing small change interventions should stay in keeping with common and defining features of the small changes approach. Proof of concept for a small changes approach is clearly established and research on this approach can be expanded and broadened to further enhance this intervention technique and long-term treatment outcomes.

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THE CORE SYMPTOMS OF BINGE EATING AND OTHER ADDICTIVE BEHAVIORS: A NETWORK ANALYSIS

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Binge eating disorder (BED) is characterized by eating large amounts of food within a discrete time period with an associated sense of loss of control. Although BED is currently categorized as a feeding and eating disorder in DSM-5, there is some evidence supporting its conceptualization as a form of an addictive disorder. Research has found several similar risk factors between BED and substance use disorders, a number of clinical and behavioral parallels, and high levels of comorbidity. The literature also supports a strong relationship between overweight/obesity and BED, however the relationships between substance use and overweight/obesity are less clear.

Network analysis represents a relatively new statistical method in psychopathology research to examine how symptoms interact, perhaps in bidirectional fashion. Using a network analytic approach, we aimed to identify which binge eating symptoms are most central in a healthy (N = 155) and overweight/obese sample (N = 150). Secondary analyses examined addictive behaviors more broadly between the two groups. College students (N = 305) completed the Recognizing Addictive Disorders Scale (RAD; Carr et al., in preparation) and the Binge Eating Scale (BES) as part of a larger questionnaire battery. The RAD is a brief screener that assesses for problematic involvement with drugs, alcohol, binge eating, smoking, video games, gambling, and sex.

An independent t-test revealed there were no statistically significant differences between group means for drugs, alcohol, binge eating, smoking, video games, gambling, or sex. Groups did differ on binge eating $F(303, 2) = 27.624, p = .002$, with the overweight/obese sample endorsing significantly more problematic use. Networks examining binge eating symptoms measured by the BES revealed different central items for healthy participants than overweight/obese participants. Items relating to restriction and preoccupation with food and eating emerged as most central in the healthy network whereas items relating to loss of control were most central to the overweight/obese network. Networks examining a broader range of addictive behaviors measured by the RAD revealed problematic involvement with drugs as the most central to both the healthy and overweight/obese networks. Gambling was also highly central to the healthy network whereas alcohol emerged as central to the overweight/obese sample. Notably, the overweight/obese network was sparser, indicating weaker relationships between the addictive behaviors. These preliminary findings suggest binge eating may be a unique construct best conceptualized from an eating disorder lens.

These findings suggest weight status relates differentially to binge eating symptoms and more broadly across addictive disorders. A better understanding of the interrelationship of symptoms of these disorders may have important implications in treatment development.

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WHICH FACTORS ARE ASSOCIATED WITH AN UNDERESTIMATION OF BODY MASS INDEX?

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Purpose: Some individuals tend to underestimate their BMI. Previous studies examining factors associated with this underestimation have found that non-Hispanic white adults underestimated their BMI when compared to Hispanic and Black adults, whereas other studies showed no racial/ethnic differences. Studies have also found that women and obese individuals were more likely to underestimate their BMI when compared to men and overweight individuals respectively. The purpose of this study was to examine demographic variables associated with the underestimation of self-report BMI in a diverse sample of overweight or obese young adults in a healthy body weight clinical trial.

Methods: Overweight or obese young Black, white, and Hispanic adults (18-35yo) enrolled in a healthy body weight clinical trial (n = 284; 77.5% female, 19.0% Black, 72.9% white and 8.1% Hispanic with a mean age of 22.9 ± 4.3 years) at two urban universities provided a self-reported height and weight and completed a clinic-measured height and weight. The difference between self-report and objective BMI was calculated as the amount of underestimation in self-report BMI (BMI-UND), with higher numbers indicating larger units of BMI underestimations. BMI category was created by dichotomizing the sample into overweight (BMIs 25 to < 30) and obese (BMIs 30 - 45).

Results: The mean self-reported BMI for the total sample was 29.99 ± 3.69 compared to clinic-measured BMI of 30.72 ± 3.8 , for an average BMI-UND of 0.72 ± 1.3 BMI units. Men were significantly more likely to underestimate their BMI compared to women (1.16 ± 1.2 vs. 0.59 ± 1.3 ; $p = .011$) and obese individuals were more likely to underestimate their BMI compared to overweight individuals (1.15 ± 1.5 vs. 0.37 ± 0.87 ; $p = 1.6$ for Blacks, 0.72 ± 1.1 for whites, and 0.36 ± 1.9 for Hispanics; $p = .26$). The overall model including age, race/ethnicity, gender, and BMI category significantly predicted BMI-UND. Significant predictors include BMI category ($p < .001$), the interaction between race and BMI category ($p = .03$), and the interaction between gender and BMI category ($p = .045$).

Conclusions: Unlike other studies it was men, rather than women, who tended to underestimate their BMI. Similar to other studies, obese individuals tended to underestimate their BMI more than overweight individuals. In this study, there were no significant differences in BMI underestimations among Blacks, whites and Hispanics. In the prediction model, being obese predicted BMI underestimation and this interacted with both race and gender separately. Within these two significant interactions, obese whites and obese males had the greatest underestimation of their BMI. Intervention implications will be discussed.

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A DEVELOPMENTAL CASCADE PERSPECTIVE OF PEDIATRIC OBESITY: A REVIEW OF PREVENTIVE INTERVENTIONS FROM INFANCY-LATE ADOLESCENCE

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Pediatric obesity has immediate and long-term consequences that often carry forward across the lifespan. A developmental cascade (DC) model offers a comprehensive framework for understanding cumulative factors contributing to pediatric obesity and has major implications for prevention. The purpose of this systematic review was to 1) examine preventive interventions from infancy through late adolescence reporting effects on weight status and/or related health behaviors (physical activity, sedentary behavior, diet), and 2) provide recommendations for future interventions. Following PRISMA guidelines, an electronic search of randomized controlled trials (RCTs) published in peer-reviewed journals between 1995–2016 targeting the prenatal through late adolescence stages was conducted. Search terms included: obesity, prevention, intervention, weight, exercise, sedentary, diet. RCTs without a post-intervention follow-up period or with a post-intervention follow-up period < 6 months were excluded. Intervention strategies and outcomes were then extracted and examined. The search yielded 2,612 articles, of which 625 were screened by full text review. Sixty-two interventions were included and organized by developmental stage: infancy (n=2), early childhood (n=10), childhood (n=29), early- to mid-adolescence (n=19), and late adolescence (n=2). Infancy and early childhood trials relied on universal prevention strategies targeting early feeding practices and positive parenting skills. Half of the childhood and adolescence trials were school-based and used universal prevention approaches (e.g., curriculum changes); those classified as selected or indicated prevention tended to involve the family for more intensive lifestyle modification. While existing interventions have addressed relevant developmental constructs (e.g., parent involvement), the cascade model provides useful directions for the development of future interventions. Specifically, the model suggests well-timed interventions that target key mediating variables stand to have the greatest impact. An increased focus on interrupting negative cascades in early stages is also warranted. Positive parenting approaches show promise in early childhood, and families are more often included in selected or indicated prevention studies at later stages, highlighting the need to involve parents in obesity prevention efforts across development. Longer follow-up periods are also necessary, as are corresponding mediation and moderation analyses.

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ASSOCIATIONS BETWEEN FACETS OF WEIGHT-RELATED QUALITY OF LIFE AND MALADAPTIVE BEHAVIORS BEFORE AND AFTER BARIATRIC SURGERY

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Bariatric surgery is one of the most effective options for weight loss for individuals with obesity. However, following bariatric surgery, there is evidence for increases in substance use problems. In addition, while binge eating generally decreases after surgery, there is evidence for onset or recurrence of binge eating post-surgery in some individuals. Given that these maladaptive behaviors may be associated with weight regain and physical and psychiatric morbidity, it is important to better understand why individuals engage in these behaviors both before and after bariatric surgery. The ways in which one's weight affects their quality of life (i.e., weight-related quality of life [WRQOL]) may be a factor that increases the likelihood of engaging in maladaptive behaviors. Therefore, the purpose of this study was to examine associations among five dimensions of WRQOL and maladaptive health behaviors (i.e., binge eating, smoking, problem alcohol use) in adults with obesity before and after bariatric surgery. As part of the Longitudinal Assessment of Bariatric Surgery (LABS) study, data were collected from 2,430 individuals who received weight loss surgery (gastric bypass or banding) at baseline, 1-year, 3-years, 5-years, and 7-years. Self-report measures of demographics, WRQOL, and behaviors were completed at each assessment. Generalized linear models and general estimating equations were calculated to examine associations between facets of WRQOL and maladaptive behaviors (i.e., binge eating, smoking, and problematic alcohol use) at baseline and post-surgery. At baseline, poorer self-esteem WRQOL was independently associated with greater likelihood of binge eating, and poorer work WRQOL was independently associated with greater likelihood of smoking. After surgery, at follow-up assessments where individuals reported poorer self-esteem WRQOL than their average level, they were more likely to report binge eating, smoking, and hazardous alcohol use. Given the results of this study, psychological treatment after bariatric surgery focusing on increasing one's self-esteem related to their weight may be an important intervention and prevention strategy for a variety of maladaptive behaviors.

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MERITORIOUS AWARD WINNER C200 6:15 PM-7:15 PM

BARRIERS TO BEHAVIORAL WEIGHT LOSS TREATMENT

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Objectives: Barriers to successful weight loss are poorly understood. The current study aimed to examine barriers, depressive symptoms, and social support at four different time points to identify contributing factors to poor weight loss outcomes, attrition, and the need for stepped-care in a behavioral weight loss intervention.

Methods: Fifty-three individuals (87% female; 62% Caucasian, 34% African American, 4% Asian/Pacific Islander; $M_{BMI}=35.6$, $SD_{BMI}=6.4$) were recruited for the weight loss program. All participants began with using a self-help modified version of the Diabetes Prevention Program and a Fitbit Zip® pedometer and food tracker. Over a period of six months, participants' weight loss success and need for more intensive treatment was assessed every two months based on pre-determined weight loss goals. If weight loss goals were not met, participants received meal replacements at Step 2 and individual counseling concurrent with meal replacements at Step 3. Barriers to Weight Loss, Center for Epidemiologic Studies Depression Scale, and the Weight Management Support Inventory (WMSI) were used to assess for barriers to weight loss, barriers to program completion, and the need for more intensive treatment.

Results: Independent sample t-tests were used to assess barriers contributing to attrition and found greater social pressure barriers, greater food craving barriers, and greater reported helpfulness of informational and appraisal support to be associated with dropping out of the program. A series of one-way between-group ANOVA tests were conducted to compare differences between stepped-care need. Greater emotional support frequency and greater situational, external physical activity, stress and depression, and food craving barriers were related to higher stepped status. The relationships between total percentage of bodyweight lost from baseline to 6 months and depression, social support, and barriers scores were explored at the four time points using Pearson correlation coefficient. Weight loss was related to cost of diet barriers and frequency of information support.

Conclusions: Social pressure, food craving, stress and depression, and cost of diet barriers reported during the current intervention were related to attrition, stepped-care need, and weight loss. Interestingly, greater helpfulness and frequency of weight loss support was related to attrition, greater stepped-care need, and worse weight loss outcomes.

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CHANGES IN THE PERCEPTION OF SELF-WEIGHING ACROSS WEIGHT LOSS AND WEIGHT MAINTENANCE

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Background: Despite evidence demonstrating benefit, there is often reluctance to engage in self-weighing. Changes in self-weighing perceptions over the course of obesity treatment are unknown.

Methods: Participants (n=248) who were active duty military personnel and received a counselor-initiated (CI) or self-paced (SP) 12-month program adapted from Look AHEAD intensive lifestyle intervention. Self-weighing perceptions (i.e., how “helpful”, “positive”, “frustrating”, “anxiety provoking”, and “making self-conscious”) were rated on an 8-point scale at baseline, 4 and 12 months.

Results: Using random coefficient models, overall, the perception that self-weighing is *helpful* and *positive* significantly increased during the weight loss phase (*Helpful*, Baseline: M (SD) = 5.1 (2.0); 4 month change: +2.2 (2.3); *Positive*, Baseline: 4.2 (2.0); 4 month change: +1.6 (3.1)), and then slightly, but significantly decreased during the weight maintenance phase (*Helpful*, 12 month change: -0.3 (1.5); *Positive*, 12 month change: -0.4 (1.5)). In contrast, the perception that self-weighing is *frustrating* and *makes you self-conscious* significantly decreased during weight loss (*Frustrating*, Baseline: 4.5 (2.2); 4 month change: -1.0 (3.4); *Self-conscious*, Baseline: 4.5 (2.3); 4 month change: -3.3 (2.1)) and slightly, but significantly increased during maintenance (*Frustrating*, 12 month change: +0.4 (2.0); *Self-conscious*, 12 month change: +0.6 (1.8)). Perceptions of self-weighing as *anxiety provoking* were stable. At baseline, CI and SP participants perceived self-weighing similarly. Over 12 months, CI participants began viewing self-weighing as significantly more *helpful* and *positive* as well as *making them less self-conscious* than SP participants, while their view on self-weighing as *frustrating* or *anxiety provoking* did not differ significantly.

Conclusions: Participants viewed self-weighing more positively and less negatively during the weight loss phase, yet there were small, but significant reversions to baseline values during weight maintenance. However, importantly for clinical practice, perceptions of self-weighing remained significantly more positive and less negative than at baseline. In addition, participants in a more intensive weight management program had even more positive and less negative views of self-weighing.

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COACHING IN THE KITCHEN: A PILOT STUDY OF HOME-FOCUSED WEIGHT LOSS TREATMENT

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The home food environment (HFE), which consists of the availability, portion size, and visibility of healthy and unhealthy foods in one's household, is a potentially powerful target for change during weight loss treatment, as adults consume two-thirds of their calorie intake in the home. However, HFE-focused interventions have had only modest success to date, perhaps because they have typically been delivered in the clinic. Delivering sessions in the home might facilitate more effective engagement of the HFE, but little research is available on home-based weight loss treatment for adults. This study pilot-tested a 4-week, home-based weight loss intervention that had a primary focus on modifying the HFE. Adults ($n = 10$, M age = 49.3 years; M BMI = 31.4 kg/m²) were provided with two sessions in their homes and, to increase scalability, two virtual home visits conducted through video chat. In session, coaches surveyed the HFE, provided accountability for making and maintaining HFE changes, and conducted experiential activities that reduced the intention-behavior gap for HFE change. Assessors objectively measured all foods present in the home at pre- and post-treatment. Retention and treatment engagement were excellent, with 100% of participants completing all four treatment sessions and 100% completion of the post-treatment assessment. Technology feasibility was high, with 19 out of 20 video sessions conducted as scheduled. Pre-post weight loss averaged 2.8%, which meets expectations for a 4-week program. Clinically significant decreases were observed in the availability of obesogenic foods, including sweets ($d = 0.24$), sugar-sweetened beverages ($d = 0.32$), high-calorie prepared entrees ($d = 0.30$), and added fats ($d = 0.62$). Participants also reported increases in use of HFE management strategies, including placing low-calorie foods in visible places ($d = 1.48$) and avoiding buying tempting foods ($d = 1.45$). Qualitative feedback highlighted convenience and accountability as key benefits of home visits. These data suggest that experimental research on this approach is warranted, using a full-length treatment protocol and isolating the effects of treatment location (i.e., home vs. clinic) and content (i.e., HFE vs. standard). From a treatment impact perspective, home visits are appealing not only because of their potential to improve outcomes, but because they may expand the reach of treatment to a wider audience, as many adults report barriers to attending sessions in clinic over the long-term.

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DEVELOPMENT AND VALIDATION OF A CULTURALLY-SENSITIVE WEIGHT LITERACY SCALE

Monica Wang, ScD, MS¹, Tariana V. Little, MS², Amy Borg, MPH, MEd³, Christine Frisard, MS, BA⁴, Milagros C. Rosal, MS, PhD³¹Boston University School of Public Health, Boston, MA; ²Harvard T.H. Chan School of Public Health, Boston, MA; ³University of Massachusetts Medical School, Worcester, MA; ⁴University Massachusetts Medical School, Worcester, MA**Objectives:** To develop and validate a culturally- and literacy-sensitive weight literacy scale for adults.**Methods:** The two-phase study utilized quantitative and qualitative methods. Participant recruitment and study procedures took place in community settings in central Massachusetts for both study phases. Phase 1 of the study consisted of developing an initial survey (English and Spanish versions) assessing weight literacy based on a review of the literature; conducting semi-structured interviews with content experts ($N=9$) to refine survey items; and conducting in-person cognitive interviews with 20 study participants ($N=10$ English-speaking and $N=10$ Spanish-speaking adults) for survey pre-testing. Survey items were modified based on Phase 1 findings.Phase 2 of the study consisted of administering the survey to 200 study participants ($N=100$ English-speaking and $N=100$ Spanish-speaking adults) and assessing the scale's validity and reliability. Two weeks post-survey completion, a subset of Phase 2 participants ($N=35$ English-speaking and $N=35$ Spanish-speaking) completed the scale to examine test-retest reliability and a quantitative survey assessing dietary and physical activity behaviors and sociodemographics. Participants' anthropometrics were obtained by study staff. After scoring phase 2 participants' initial weight literacy scale responses, the Kuder Richardson's Coefficient of reliability was calculated. Two rounds of factor analysis were performed to identify items for elimination. Correlations between weight literacy scale scores and related measures (body mass index and weight status, dietary behaviors, physical activity behaviors, and confidence in filling out medical forms) were examined.**Results:** The final scale included 27 items and demonstrated good internal consistency (Kuder Richardson Coefficient = 0.85) and reasonable construct validity.**Conclusion:** The weight literacy scale is a reliable and valid research instrument to assess weight literacy among English- and Spanish-speaking adults.

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DIFFERENCES IN RECEIPT OF DIET ADVICE FROM HEALTHCARE PROVIDERS BETWEEN AFRICAN-AMERICANS & CAUCASIANS SEEKING MEDICAL CARE

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Background: The U.S. Preventive Task Force recommends that clinicians offer intensive lifestyle counseling for obesity since research shows that physician-delivered counseling on healthy eating and physical activity are more likely to initiate patient lifestyle changes and successful weight loss. Unfortunately, weight-loss advice, which includes diet counseling, is low (34–65% among overweight & obese populations). In the U.S. African-Americans are disproportionately impacted by obesity compared to Caucasians (e.g. 44% vs. 33%), and also have higher rates of obesity-related diseases. There are, however, mixed results in the literature regarding whether ethnicity is associated with receiving weight or diet advice. African Americans, for example, may be more or less likely than Caucasians to receive weight-related advice. The association, however, could be influenced by the patient's BMI, and other demographic, and health factors. The primary aim of this study was to examine the relationship between BMI, ethnicity, and receipt of diet advice among a predominantly African-American, low-income, and urban, patient population.

Method: Participants (N= 3212) were 69% female; 47.4% BMI ≥ 30 , age M = 46.21, SD =12.02, 71% African-American; 24% Caucasian; 32% employed full or part-time, and were approached while they waited for medical care in a large hospital outpatient waiting room in Richmond, VA. Participants completed a 15-minute anonymous computer-directed health screening survey that included demographics, health status, height, weight, & whether or not they had ever been told by a doctor, nurse, or other health professional that they should go on a diet.

Results: Overall, 47.4% of the sample endorsed ever receiving prior advice to go on a diet and there was no difference between African-Americans (47.9%) and Caucasians (45.9%) ($\chi^2(1) = 1.338$; $p > .05$). An adjusted multifactorial logistic regression controlling for age, gender, number of illnesses, heart disease, employment, education, marital status, insurance, and smoking status, however, showed that females, a greater number of illnesses, presence of heart disease, and more education, was associated with greater odds of receiving diet advice (all $ps \leq .005$). Higher BMI was associated with receipt of diet advice, but more so among Caucasians (OR = 1.26, 95% CI [.197-.268]), $p < .001$; than compared to African-Americans (OR = 1.20, 95%CI [.170-.205], $p < .001$).

Conclusions: Rates of diet advice from healthcare professionals remain low. Ethnic differences exist in receipt of diet advice, but particularly among the very obese. Discussions about weight loss, including diet, should be provided to all patients, regardless of ethnicity or level of obesity.

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EXERCISE PREFERENCES AMONG YOUNG ADULTS: DO MEN AND WOMEN WANT DIFFERENT THINGS?

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Background: Young adult men are difficult to recruit and retain in lifestyle interventions. This may be in part to gender differences in exercise goals observed in men, but little is known about exercise preferences for young adults, specifically. The purpose of this study is to compare the exercise preferences of young men and women to inform future interventions in this area. We hypothesize that men will prefer strength training at higher rates than women, and that women will prefer supervised guidance at higher rates than men.

Methods: The sample included 288 young adults aged 18–25 (mean age=21.85, SD=2.2). Majority were women and within a normal BMI range (M=25.91, SD=5.3). An anonymous online survey study was completed. Participants were asked their preferred type of exercise (moderate intensity cardio, strength training, intense strength training, or a combination of cardio and strength training), and if they preferred to exercise at a clinic-based facility with supervised guidance or to exercise alone with guidance. Chi-square tests were conducted to determine if there are gender differences in preferences for exercise type and mode of delivery, accounting for BMI.

Results: Over two-third of young adults preferred a combination of moderate intensity cardio and strength training. Women and men differed significantly in their exercise preferences ($p < .001$). Less than 1% of women preferred intense strength training compared to the 15.3% of men. Women (17.4%) preferred moderate intensity cardio at higher rates than men (12.2%). However, when examining outcomes by BMI category, these results were only significantly different among individuals within a normal BMI ($p = .000$). Majority of young adults (67.7%) prefer exercising with on their own with guidance from a program. Men and women did not differ in their preference to exercise with guidance or in a clinic-based program with supervision ($p = .115$).

Conclusion: Findings suggest that young adults overall prefer a combination of strength training and cardio, conducted on their own with guidance from a program. However, young men were more likely to prefer intense strength training; this was particularly true among men in a normal BMI range. These findings may be used to inform the tailoring of recruitment messaging and lifestyle interventions targeting this high-risk population.

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EXTRA-FAMILIAL SOCIAL FACTORS AND OBESITY IN THE HISPANIC COMMUNITY HEALTH STUDY/STUDY OF LATINOS YOUTH

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The role of extra-familial social factors, e.g., influence of peers and media, in youth obesity are not well understood. We examined associations of extra-familial social influences with obesity prevalence in 1444 participants ages 8–16 years (50.3% female; 45.7% children 8–11 years) of the Study of Latino Youth (SOL Youth) and explored their variation by sex and age. The Hispanic Community Health Study/Study of Latinos (HCHS/SOL; 2008–2011) is a population-based study of Hispanic/Latinos recruited from four urban US communities. The SOL Youth ancillary study recruited youth offspring of HCHS/SOL participants and their primary caregivers between 2012–2014. Caregivers provided demographic information and youth completed measures of general social support from friends, dietary and physical activity (PA)-specific support from peers, and social attitudes towards weight (awareness/internalization of societal appearance ideals). Height and weight were measured to obtain age and sex-specific body mass index (BMI) percentiles; obesity was defined as BMI ≥ 95 percentile. Logistic regression models assessed main effects of social variables, and their interactions with age and sex, adjusting for potential confounders (e.g., family socioeconomic status, child nativity), design effects, and sample weights. Associations of social factors with obesity varied by both age and sex (p values for interaction $<.05$), and thus subsequent analyses were stratified by sex and age. For female children, higher peer social support was associated with lower odds of obesity (OR 0.60; 95% CI 0.42–0.87); however, this effect was not significant in adolescents. Among adolescent females, higher awareness/internalization of societal appearance ideals was associated with increased odds of obesity (OR 1.56; 95% CI 1.17–2.09). For males, higher awareness/internalization of societal appearance ideals was associated with increased odds of obesity in children (OR 1.94; 95% CI 1.39–2.69) and adolescents (OR 1.88; 95% CI 1.29–2.74). Diet and PA-specific support from peers was not associated with youth obesity. These findings demonstrate that extra-familial factors are related to obesity among Hispanic/Latino youth and that these associations vary by sex and age. Although the cross-sectional design prohibits assessment of causality, these findings suggest the potential role of addressing social support and attitudes about weight in the prevention and treatment of obesity in Latino youth.

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FRIENDSHIP AS A SOCIAL MECHANISM INFLUENCING BODY MASS INDEX (BMI) AMONG COLLEGE FRESHMEN

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Background: Social relationships have been proposed as a significant factor shaping obesity risk. Methodological limitations in previous studies hamper the understanding of the mechanisms by which social factors impact weight outcomes. The freshman year of college, a period of major social, behavioral, and weight changes, provides a context ideally suited to tracking longitudinally the impact of shifting friendship dynamics on weight outcomes. This study sought to identify the mechanisms by which friends impact BMI change among a diverse group of emerging adults.

Methods: A total of 251 freshmen participants (72.1% female, 51.0% non-White) in the Social impact of Physical Activity and nutrition in College (SPARC) study provided repeated information (up to 4 times) on relationships and measured body mass index (BMI) across the 2015–2016 academic year. Stochastic actor oriented models were used to simultaneously examine change in BMI through social influence and change in friendships over time, controlling for gender, race/ethnicity, and Pell grant status.

Results: At baseline, mean BMI was 24.17 ± 4.40 kg/m². Overall, BMI tended to increase over time, while the BMIs of friends were more likely to converge relative to the BMIs of students not identified as friends ($p=0.043$). The higher a participant's BMI, the greater the likelihood that the participant's BMI would increase if their friends had a higher BMI (aOR range: 1.5–2.6). Decreases in BMI were uncommon and did not reach statistical significance for any combination of participant and friend BMI.

Conclusions: Emerging adults' BMI changes appear to be influenced by the BMI of friends. Further investigation should aim to identify specific health behaviors that increase weight during college.

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INITIAL WEIGHT LOSS AND FEMALE ADOLESCENT WEIGHT LOSS PROGRAM SUCCESS

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Behavioral weight loss programs for adolescents involving comprehensive, structured programs addressing nutrition, physical activity and behavioral skills appear to be most efficacious. There is evidence that initial weight loss (WL) in behavioral weight loss programs for adults is a significant predictor of overall program success; the purpose of this study was to determine initial 1-month WL factors that predict overall program success among adolescents. Overweight/obese female adolescent participants from two RCT 16-week WL trials were used for the purpose of this analysis. Demographic and anthropometric data, adherence (total number of weekly dietary self-monitoring diaries completed) and attendance at face-to-face meetings were collected. Descriptive statistics were used to investigate the distributions of all variables. Initial WL was examined in three ways: absolute weight loss (pounds), change in % overweight (%OW), and rate of weight loss. Absolute value change scores subtracting the 4-week and 16-week values from baseline values were calculated for absolute weight and %OW to represent WL. A step-wise, hierarchical linear regression analysis was used to examine initial WL at 4-weeks as a predictor of change in %OW at week 16. The sample was primarily white (n=72; 70.6%), with an average age of 15.6 ± 1.2 years, and a mean baseline BMI of 32.8 ± 4.2 units. Participants (n=67) lost an average of $2.43 \text{ lbs} \pm 4.46$ from 1–4 weeks, and a total of $7.21 \text{ lbs} \pm 9.56$ from baseline to 16 weeks. The number of self-monitoring diaries submitted differed significantly by weight loss group (Welch's $F(2, 60.738) = 5.104$, $p = .009$, $\eta^2 = .057$). Games-Howell post hoc analysis revealed that the increase in self-monitoring diaries from the slow to fast weight loss category (0.556, 95% CI (0.111 to 1.001)) was statistically significant ($p = .011$), suggesting that in the first month of treatment, participants who lost weight more quickly turned in significantly more diaries than participants who lost weight slower. At 16 weeks, 36.2% (n=25) participants lost 5% of their initial body weight. The full model predicting change in %OW from baseline to 16 weeks was statistically significant, $R^2 = .669$, $F(6, 57) = 19.216$, $p < .0005$; adjusted $R^2 = .634$. The addition of age, race/ethnicity, adherence, and attendance to the prediction of WL, led to a statistically significant increase in R^2 of .374, $F(4, 58) = 8.790$, $p < .0005$, and the addition of WL loss during the first month led to a statistically significant increase in R^2 of .287, $F(1, 578) = 49.402$, $p < .0005$. In the full model, initial WL and self-monitoring diaries predicted change in %OW at 16 weeks. Understanding the factors associated with program success can identify programming components that can be strengthened in future intervention development and design.

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MEAL REPLACEMENT USAGE AND FAVORABILITY IN A WEIGHT LOSS TRIAL

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A majority of United States adults are overweight or obese, and that number continues to grow (Flegal et al., 2012). Commercial meal replacements (MR) are a safe and effective strategy for weight loss (Hemmingson et al., 2012; Saris, 2001), with some interventions demonstrating weight losses of 15–25% (Tsai & Wadden, 2005). Yet, questions remain about the feasibility and acceptability of liquid MR by patients in weight loss interventions. The purpose of this study was to conduct a preliminary analysis of use, adherence, and preference for MR among adults enrolled in a 6-month behavioral weight loss intervention, where half were randomized to receive MR recommendations. Rather than provide MR throughout the trial, which was considered cost-prohibitive, participants received only a one week supply and a recommendation to continue use. Participants (N=562) had BMIs ranging from 25–40 kg/m² (M=32.51, SD=3.68). Approximately 81.64% were female. Ages ranged from 18–61 (M=37.67, SD=10.61). The majority were Not Hispanic or Latino, 86.99% and 3.57% reported their ethnicity as “Other/Unknown.” At 6 months, participants completed an exit interview that included questions about MR. Of participants who completed the exit survey (n=465), 111 expressed a preference for MR (M=1.80, SD=1.41), ranking MR a 1, 2, or 3, when asked to rank 6 potential treatment components (1= I would want this component MOST and 6= I would want this component LEAST). Among the 232 participants randomized to receive meal replacement, 106 recorded intake of a standard brand MR in the smartphone app during the 6-month intervention. About half of the participants randomized to that condition preferred the MR. Of those reporting MR intake, the number of MR entries ranged from 1 to 27 over the 6 month intervention (M=5.23, SD=6.18). When asked on an exit survey what they liked most about the study, 20 participants reported a positive experience with MR. Of the 465 completed exit surveys, 171 mentioned MR and 111 of those used positive words (e.g., easy, useful, effective) to describe MR when asked for additional comments. This preliminary analysis was limited by the predetermined MR list and does not include any custom food entries made by a participant. Overall, results suggest that MR can be enjoyed and used by participants in a weight loss trial when use is recommended and not provided.

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OVERVALUATION OF SHAPE/WEIGHT AND BINGE EATING ARE ASSOCIATED WITH FOOD ADDICTION IN RACIALLY DIVERSE ADULTS WITH OBESITY

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Recent research has shown that food addiction is comorbid with binge eating disorder and obesity. Poor body image has also been strongly linked to both conditions. Less is known about the relationships between body image, binge eating, and food addiction in racially diverse populations. Specifically, overvaluation of shape/weight, a cognitive feature of eating disorders described as a maladaptive form of self-evaluation, has not been studied in this context. The current study examined overvaluation of shape/weight, body dissatisfaction, and binge eating in racially diverse adults with and without food addiction who were seeking weight loss treatment. Participants were 123 adults (46.3% ethnic minority) aged 18 to 84 ($M = 50.10$, $SD = 14.83$) with a mean body mass index (BMI) of 37.27 ($SD = 7.27$). Prior to the start of treatment, participants completed a battery of self-report questionnaires. Approximately 40.7% of the participants ($n = 50$) reported overvaluation of shape/weight, 21.1% ($n = 26$) reported at least one binge episode per a week for the past month, and 22.0% ($n = 27$) met criteria for food addiction. Independent samples t -tests were conducted to examine the influence of a food addiction diagnosis on BMI, overvaluation of shape/weight, body dissatisfaction, and binge eating. Results indicated that individuals who met criteria for food addiction had significantly higher BMIs ($M = 39.67$, $SD = 8.56$) than those without food addiction ($M = 36.30$, $SD = 6.43$; $t(104) = 2.15$, $p < .05$). No differences were found in body dissatisfaction between individuals with and without food addiction ($p > .05$). However, individuals with food addiction reported significantly greater overvaluation of shape/weight ($M = 5.23$, $SD = 1.18$) than those without food addiction ($M = 3.30$, $SD = 2.114$; $t(80.26) = 5.57$, $p < .001$). Individuals who met criteria for food addiction also had more weekly binge episodes ($M = 1.83$, $SD = 1.93$) than those without food addiction ($M = 0.53$, $SD = 0.91$; $t(28.88) = 3.31$, $p < .01$). Results suggest that individuals with food addiction are more likely to have poor body image as indicated by overvaluation of shape/weight, not body dissatisfaction. These findings support research showing that overvaluation of shape/weight is distinct from body dissatisfaction and may reflect greater severity of negative body image. Consistent with previous studies, individuals with food addiction had higher weight and binge frequency. Future research should investigate the implications of overvaluation of shape/weight and food addiction for long-term weight loss in racially diverse adults seeking weight loss treatment.

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PEER ATTACHMENT ORIENTATION PREDICTS ENERGY AND MACRONUTRIENT INTAKE IN CHILDREN AGE 6–12

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Background: Food overconsumption, particularly overconsumption of high caloric foods, is a core cause of obesity. This paper assesses peer attachment (internalized patterns of caretaker availability which influence self-views and distress regulation) as a controllable factor affecting food consumption in children. We hypothesize that suboptimal peer attachment styles lead to worse eating habits.

Objectives: This abstract investigates the extent to which childhood attachment styles influence macronutrient and energy consumption in children.

Methods: 271 parents reported on various behaviors of their 6–12 year old child ($M_{age} = 9.15(1.57)$) enrolled in a cohort study during a telephonic interview. Attachment was measured using the Attachment Questionnaire-Child and macronutrient consumption using web-based Food Frequency Questionnaire.

Results: Children with higher attachment avoidance had lower caloric intake ($F(6, 225) = 5.18$; $\beta = -134.10(58.93)$, $p < .05$). Attachment security and anxiety did not affect energy intake, $p > .05$. Gender was the only predictor of carbohydrate intake—compared to girls, boys consumed more carbohydrates ($F(7, 225) = 4.27$; $\beta = 33.27(16.10)$, $p < .05$). Attachment security and avoidance negatively predicted fat consumption; specifically, children with higher attachment security ($F(10, 221) = 6.52$; $\beta = -5.52(.16)$, $p < .05$) and avoidance ($F(10, 221) = 8.79$; $\beta = -7.28(2.45)$, $p < .01$) consumed less fat. On the other hand, attachment anxiety positively predicted fat consumption ($F(10, 221) = 7.53$; $\beta = 6.04(2.20)$, $p < .01$), with more anxiously attached children consuming higher amounts of fat. We found the same pattern for fat as a percentage of total energy intake. Attachment avoidance negatively predicted protein consumption ($F(7, 225) = 5.04$; $\beta = -5.53(2.46)$, $p < .05$), with more avoidant children eating fewer proteins. Attachment style did not predict fiber consumption, $p > .05$.

Conclusion: Peer attachment influences children's food consumption, affecting the core structure of their food choices. Our findings suggest that the deactivation of the avoidant attachment system translates in lower macronutrient intake, including caloric, fat, and protein. However, the hyperactivation of the anxious attachment system translates into higher fat consumption. We also show that a secure attachment does not necessarily lead to better food consumption.

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PERCEIVED BARRIERS TO PHYSICAL ACTIVITY DURING BEHAVIORAL WEIGHT LOSS: ASSOCIATION WITH ACTUAL ACTIVITY LEVELS

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Most adults with overweight or obese BMIs participating in behavioral weight loss (BWL) never achieve prescribed physical activity (PA) levels. Little research has examined perceived barriers to PA in the context of BWL. This study aimed to: 1) identify associations between perceived PA barriers and demographic and psychological characteristics, 2) examine changes in perceived PA barriers during BWL, and 3) determine whether perceived PA barriers predict actual moderate to vigorous PA (MVPA).

Adults (n=283) with overweight or obese BMIs enrolled in a BWL program wore an accelerometer at baseline and 6 months and completed self-report measures including: the Barriers to Being Active Scale, which assesses seven barriers to PA, a demographic questionnaire, the Physical Activity Acceptance Questionnaire, which evaluates ability to tolerate PA discomfort, and the Weight Efficacy Lifestyle Questionnaire, which measures self-efficacy for weight control.

Compared to Black participants, White participants reported lack of willpower, time, and social influence as greater PA barriers ($p < .05$), and lack of resources ($p = .09$) as a lesser PA barrier. Younger participants reported lack of time, energy, and resources as greater PA barriers compared to older participants ($p < .05$). There were no differences in perceived PA barriers by sex. Participants with greater perceived PA barriers reported lower acceptance of PA and lower weight control self-efficacy ($p < .05$). All perceived PA barriers significantly decreased from baseline to 6 months ($p < .01$), except fear of injury ($p = .06$). All baseline perceived PA barriers except fear of injury and lack of resources were associated with less MVPA at baseline controlling for BMI ($p < .05$), but did not predict 6-month MVPA. Decreases in the time and willpower barriers predicted greater 6-month MVPA controlling for baseline MVPA ($p < .01$).

Participants with greater perceived PA barriers differed on demographic characteristics and presented with additional treatment barriers, i.e., lower self-efficacy for weight management, lower acceptance of PA discomfort, and lower baseline MVPA. Perceived PA barriers decreased during BWL and a larger decrease in two barriers (lack of time and willpower) was associated with greater MVPA at 6 months, suggesting that these may be key barriers to target. Future research should examine if PA barriers predict MVPA after intervention ends, which may have additional implications for treatment tailoring.

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PERSONALITY AND WEIGHT LOSS MAINTENANCE: COMPARING CONSCIENTIOUSNESS OF SUCCESSFUL AND UNSUCCESSFUL WEIGHT LOSS MAINTAINERS

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Background: The role of personality in weight loss maintenance (WLM) is poorly understood. Higher conscientiousness, a trait that reflects the tendency to be self-disciplined and contains facets of self-control, order, virtue, industriousness, responsibility, and traditionalism, might favorably influence persistence and success in maintaining a reduced body weight. Yet, while conscientiousness is related to health-promoting behaviors in general, no study has specifically evaluated the importance of conscientiousness for WLM. We compared conscientiousness and control over healthy lifestyle behaviors (i.e. food quantity and temptations, consistent meal and sleep timing, exercise adherence, and psychosocial health and stress coping) in successful and unsuccessful weight loss maintainers.

Methods: The sample included 869 National Weight Control Registry participants (52.1 ± 13.1 yrs; Body Mass Index [BMI]= 27.0 ± 5.5 kg/m²; 70% female) who reported maintaining a ≥ 30 lb weight loss for ≥ 1 yr (maintainers) and 642 participants from Amazon's M-Turk crowdsourcing marketplace (36.2 ± 11.1 yrs; BMI= 29.9 ± 7.5 kg/m²; 60% female) who reported trying but failing to maintain weight loss for 1 yr (non-maintainers). Both groups self-reported height and weight and completed a demographics form, the Cherynshenko Conscientiousness Scale and the Healthy Lifestyle & Personal Control Questionnaire online. Analysis of Covariance compared the groups on the above outcomes, adjusting for demographics and BMI, and provided estimates of effect size (ES; Cohen's *d*).

Results: Maintainers reported higher levels of total conscientiousness (180.9 ± 15.4 vs. 172.3 ± 21.2 ; $p = 0.003$; ES=0.46), order, virtue, traditionalism, responsibility, and industriousness ($p < .05$; ES=.09-.63), but not self-control, vs. non-maintainers. Maintainers also reported greater degree of control over food quantity and temptations, consistent meal and sleep timing, and exercise adherence ($p < .001$; ES=.62-1.1 for all), but not psychosocial health and stress coping, vs. non-maintainers. In both groups, higher levels of total conscientiousness were related to greater control over healthy lifestyle behaviors ($p < .001$; $r = .37$).

Conclusions: Successful weight loss maintainers reported small-to-moderately higher levels of conscientiousness compared to non-maintainers. Given the potential importance of conscientiousness for WLM, evaluating whether it can be modified to assist with long-term weight loss success is warranted.

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REINFORCEMENT PATHOLOGY: ASSOCIATION BETWEEN INHIBITORY CONTROL, FOOD REWARD SENSITIVITY, AND WEIGHT LOSS

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Background: Preliminary evidence from correlational and lab-based studies suggests that inhibitory control and food reward sensitivity may affect energy intake regulation and thus influence body weight. Little is known, however, regarding how these factors (and their interaction, referred to as “reinforcement pathology”) may affect attempts at weight loss and whether inhibitory control and food reward sensitivity change in response to participation in behavioral weight management intervention (which focus on improving skills related to self-regulation of energy intake).

Methods: We investigated these questions in 65 participants (mean±SD age=50.8 ± 10.7years, BMI=31.4 ± 4.7kg/m², 68%Female, 83%White) enrolled in a 12-week Internet-based behavioral weight management program who completed the Go-No-Go inhibitory control task, the self-report Power of Food Scale, and were weighed at baseline and Month 3 (post-test). Multiple regression analyses were used to examine the association of these variables with weight loss.

Results: Inhibitory control at baseline was significantly associated with percent weight loss from baseline to Month 3, $\beta=0.18$, $p=.002$, such that individuals who made more errors on the Go-No-Go at baseline lost less weight during the intervention. Individuals in the lowest quartile for errors lost $-10.6 \pm 5.9\%$ of baseline weight, compared to a $-4.6 \pm 5.5\%$ loss for those in the highest quartile, $p=.006$ (total sample weight change from baseline to Month 3 was $-7.5 \pm 5.7\%$). There were no associations, however, between percent weight loss and baseline food reward sensitivity or the hypothesized reinforcement pathology interaction, $ps>.05$. From baseline to Month 3, participants demonstrated decreases in inhibitory control errors, $p=.011$, and food reward sensitivity, $\beta=0.16$, $p=.027$. Decreases in inhibitory control errors or the hypothesized interaction, however, were not significantly associated with weight change.

Discussion: The current study represents the first investigation into the impact of inhibitory control and food reward sensitivity on weight loss in adults. Our results demonstrate that individuals with poorer inhibitory control at baseline lost less weight during a 12-week behavioral weight management intervention, that participants experienced improved inhibitory control and food reward sensitivity during the intervention, and further that greater improvements in food reward sensitivity were associated with larger weight losses. Future studies should investigate whether improvements in inhibitory control and food reward sensitivity remain after the end of treatment, and further examine the impact of these factors on weight maintenance and regain.

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SELECTING FOR SIMILARITY: THE PRESENCE OF HOMOPHILY AMONG WEIGHT LOSS PARTICIPANTS AND THEIR SUPPORTERS

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In the context of weight loss, people may choose different individuals to support them. Homophily, or the tendency of people to associate with others like them, could facilitate mutual understanding and provision of social support. This study assessed the degree of homophily that exists when participants freely choose a support person (Buddy) in a weight loss intervention. Homophily was assessed on age, gender, race/ethnicity, location, and baseline BMI. Independent-samples t-tests were performed to assess for differences between groups for continuous variables. Chi-squared tests determined whether overall demographic proportions were independent by group. A similarity (Same/Different) variable was then created within each dyad and frequencies tallied, and exact binomial tests were performed on each similarity variable to determine whether probability of selecting a homophilous Buddy was different than chance. We hypothesized participants and Buddies would exhibit homophily on race/ethnicity, gender, age, and geographic location, but would not exhibit BMI homophily. Participants (P) (n=562) and Buddies (B) (n=562) were primarily White (P=74.2%; B=73.7%), female (P=81.7%; B=66.6%), and had a BMI in the overweight-obese range (P $m=32.3(3.6)$; B $m=27.4(6.0)$). Most participants chose friends (39.2%) or spouses/partners (32%) as Buddies. At the group level, Buddies weighed less ($p<.001$) and had lower BMIs ($p<.001$) than participants, but no difference was found for age between groups. The distribution of Buddy gender to participant gender was equal at the group level; however, the distributions of Buddy race and ethnicity to participant race and ethnicity were unequal at the group level ($X^2(1)=329, p<.001$; $X^2(1)=85, p<.001$). At the dyad level, most participants selected a Buddy who lived in the same geographic location (80.2%) and was of the same race (81.1%), ethnicity (80.3%), and gender (64.8%). However, most participants (84.9%) selected a Buddy of a different BMI ($m\text{ diff}=4.9\text{kg/m}^2$), and selected Buddies who weighed less. All proportions were significantly different than what would be expected by chance ($p's<.001$). While homophily on demographic features was common, lack of BMI homophily suggests the intentional selection of Buddies who weigh less, perhaps as a weight loss model. Future studies should examine whether homophily is related to more weight loss, and determine whether increased levels of homophily improve support effectiveness.

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SLEEP DURATION AND ITS RELATIONSHIP TO ANTHROPOMETRICS, BMI AND WC, AMONG BLACK WOMEN IN THE SISTERTALK II STUDY

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Background: Increasing prevalence of obesity (BMI ≥ 30 kg/m²) is observed among all ethnic groups, but especially for non-Hispanic Black women among whom 56.6% are obese (Ogden et al., 2014). Sleep duration and sleep pattern are increasingly recognized as an essential aspects of health promotion. Thus, sleep may also affect obesity-related outcomes among non-Hispanic Black women.

Methods: The baseline data from 581 adult women enrolled in the SisterTalk Adhere Study who were aged ≥ 18 years, who identified as Black, spoke and read basic English, and had a BMI ≥ 22 kg/m² were examined for the relationships of sleep duration and sleep pattern with body mass index (BMI) and waist circumference (WC). Self-reported weekday sleep duration was used to categorize participants as very short sleepers (≤ 5 hours), short sleepers (6 hours), optimal sleepers (7–9 hours), and long sleepers (≥ 10 hours). Sleep pattern was defined by self-reported weekday and weekend hours of sleep categorized as consistently short sleepers (< 7 hours for weekdays and weekends), social jetlag group (< 7 hours for weekdays and ≥ 7 hours for weekends), and consistently optimal sleepers (≥ 7 hours for weekdays and weekends or

Results: During weekdays, 25.3% of women were very short sleepers, 28.6% were short sleepers, 41.0% were optimal sleepers, and 5.2% were long sleepers. Compared to optimal sleepers, both very short sleepers (+1.78 kg/m²; $p = 0.033$) and long sleepers (+4.21 kg/m²; $p = 0.006$) had significantly higher BMI. Compared to optimal sleepers, very short sleepers and long sleepers had larger WC (+2.68 cm; $p = 0.133$ and +6.79 cm; $p = 0.038$, respectively). Sleep pattern was not associated with either BMI or WC.

Conclusions: In this sample of adult non-Hispanic Black women, a U-shaped association most consistently characterized the association of sleep duration with BMI and WC. Excess weight is associated with both inadequate and excessive sleep, but abdominal obesity associated only with excess sleep. More research will help to further describe sleep as a risk factor for or result of obesity and abdominal fat.

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REAL-TIME STRESS RELATES TO TEACHING EFFECTIVENESS: A LONGITUDINAL/MOMENTARY ANALYSIS

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This study examines the link between middle school teachers' stress responses and their teaching effectiveness (TE) over 2 years, determining both direct and mediated effects via health outcomes (burnout and somatic complaints). Participants were 202, 6th-8th grade core teachers, and were 77% female (Mean age = 40.4). This is a prospective longitudinal study over 2 academic years: Yearly, for 3 days (fall), 1 day (winter), and 2 days (spring). The multi-method model included concurrent measures of teacher stress (survey/diary) and TE (self-reported/observed). Survey measures were a Demographic and professional Survey, Maslach Burnout Inventory for teachers (MBI-form Ed, Maslach et al., 1996), Somatization scale of the Symptom Checklist - SCL-90 R (Derogatis, 1983). Ecological momentary assessment was conducted via the "Teacher Stress Diary", a validated iPod-based diary with 61 items (Authors, 2016). Items are brief questions, on a scale of 0–100, displayed on the screen (e.g. How are you feeling?). Negative affect (NA) was the mean of 5 negative affect states (e.g. stressed, sad). Self-reported TE (in previous class period) was the mean of 6 items (e.g. "Managed student behavior"). An iPad-based Classroom Observation System was developed and validated (Authors, 2011) measuring 4 core dimensions of TE: Instructional Strategies, Classroom Management and Organization, Presentation of Subject Matter and Learning Environment. The study sought to link teacher stress to TE both directly and via mediated effects (health outcomes). To evaluate direct effects, we fit Semi-parametric Mixed Effects models (SPMEM). TE was predicted by covariates (e.g. gender, seniority), time scales (season/day/hourly), and stress responses. We found direct effects of momentary stress responses (Negative affect -NA, feeling "stressed") on concurrent diary-reported TE over 2 years. Higher NA and Stress were associated with lower TE (YX estimate = -3.16 to -1.34, respectively). The direct effects of momentary stress were replicated for each dimension of TE, although with variability across dimensions. NA seems to have a stronger relation to Classroom Climate (YX estimate = -6.42) than to Instruction (YX estimate = -2.20). The multi-method data supported the predicted direct relations of real-time teacher stress and TE, suggesting that teacher well-being does matter for TE, and relations were sustained over 2 years. Mediated effects will be presented at the conference.

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A SYSTEMATIC REVIEW OF CROSS-SECTOR COLLABORATION IN BUILT ENVIRONMENT INITIATIVES FOR PHYSICAL ACTIVITY: LESSONS LEARNED

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An evidence-based strategy to increase physical activity is improving the built environment through interventions that address transportation systems in combination with land use and environmental design components. Implementing these types of interventions requires effective cross-sector collaboration among the stakeholders who have influence over the built environment. The purpose of this systematic review was to identify essential processes and characteristics of cross-sector collaborations that resulted in changes to the built environment. Four databases (PubMed, CINAHL, Web of Science, and Academic Search Complete) were searched for key terms in November 2017. To be included, articles had to be published in peer-reviewed journals, discuss features of cross-sector collaboration in the context of built environment initiatives focused on physical activity, and be conducted in North America. The systematic review followed PRISMA guidelines and utilized EPPI-Reviewer 4 software for data management. Data were abstracted by two researchers and themes were synthesized using directed content analysis. After removing duplicates, 212 articles were screened on title/abstract, 38 were reviewed on full-text, and 31 were included in analysis. A variety of sectors were involved with built environment initiatives that modified policies, plans, and infrastructure to increase physical activity among all age groups. Key themes included the evolving composition and activities of collaborative groups, the initial need to raise awareness and knowledge of the interrelationships between health and the built environment, varied mechanisms for meaningfully involving community members, challenges encountered, and lessons learned. The public health sector—particularly departments of health—played a notable role in convening and facilitating collaborative efforts with non-traditional partners, thus extending its reach into transportation, land use, and community design spheres. As collaborative groups built capacity to address the built environment, concrete accomplishments helped to sustain the work. However, many of the included studies only described cross-sector collaboration and did not measure or report on collaboration-specific outcomes. Nevertheless, the findings of this systematic review can be applied to developing or existing cross-sector collaborative efforts that are working to ensure that the built environment promotes physical activity behaviors across the lifespan.

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ENJOYMENT OF PHYSICAL ACTIVITY AS A PREDICTOR OF GREATER WEIGHT LOSS

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Enjoyment of physical activity (PA) has been examined as a motivator of PA in previous research. However, little research has examined how enjoyment of PA changes among adults seeking behavioral weight loss (BWL). We hypothesized that after trying a variety of new physical activities participants would increase their PA enjoyment, which may result in greater weight loss (WL). Aim 1 of this study was to evaluate if enjoyment of moderate-to-vigorous PA (MVPA) increased during 6 months of BWL treatment; aim 2 was to examine if greater increases in PA enjoyment were associated with greater WL or MVPA at 6 months.

Adults with overweight or obese BMIs (n=320) enrolled in BWL treatment completed assessments at baseline and 6 months, including weight measurement and the self-report Physical Activity Enjoyment Scale (PACES).

As expected, participants significantly increased their MVPA during treatment ($p < .001$). Enjoyment of MVPA did not significantly differ from baseline to 6 months ($p = .93$), but there was notable variability in the sample with 32.7% of participants decreasing in PA enjoyment, 36.9% increasing in enjoyment, and 5.3% showing no change in enjoyment. Change in PACES was significantly associated with WL at 6 months ($p = .03$), such that individuals with a greater increase in PA enjoyment lost more weight throughout treatment. However, after controlling for change in MVPA from baseline to 6 months this relationship was no longer significant ($p = .14$), but MVPA significantly predicted WL ($p = .005$). Change in PACES was a significant predictor of change in MVPA ($p = .002$) in that participants whose PA enjoyment increased from baseline to 6 months had a significantly greater increase in PA during this time.

Given that BWL includes strategies to make exercise more enjoyable, it was surprising that, on average, PA enjoyment did not change over 6 months of treatment. Participants with the largest increase in MVPA enjoyment had the greatest weight losses at 6 months. Interventions may need to test novel ways of increasing MVPA enjoyment. It also is possible that MVPA enjoyment is not an especially malleable construct and that participants would benefit from skills that are designed to promote MVPA in the absence of enjoyment. Even though PA enjoyment was associated with weight loss, many participants decreased their enjoyment of PA. This may stem from participants who were told to participate in PA, rather than doing the activities on their own accord.

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EXPLORING THE USE OF SPORT AS A PLATFORM FOR HEALTH PROMOTION WITH CHILDREN AND YOUTH IN AFRICA

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Background: The World Health Organization (2016) highlighted sub-Saharan Africa as having the lowest average life expectancy, highest rates of child mortality, and infectious diseases such as malaria, tuberculosis, and pneumonia. Over the past fifteen years sport has been studied as a platform in Africa to educate at-risk children and youth about infectious diseases and essential health practices. Including sport in health promotion initiatives can be an effective way to recruit and engage at-risk youth in Africa. The purpose of this research was to conduct a scoping review to identify how sport is used for health promotion and education among youth in Africa.

Method: The steps for the current scoping review included the following: (a) identification of the research question; (b) identification of relevant studies; (c) study selection; (d) charting of the data; (e) and data synthesis. Citations were retrieved from 10 electronic bibliographic databases, and keywords included sport, health promotion, Africa, youth, children, adolescents, youth development, disease, community, mortality, and intervention.

Results: A total of 916 articles were screened for eligibility. One author screened titles and abstracts and ten articles met inclusion criteria. All interventions were pragmatic trials and included the use of soccer to specifically target HIV awareness and prevention ($n=7$ articles) and targeted health prevention behaviors including clean water use, nutrition, risk factors for non-communicable diseases, HIV and malaria prevention, and proper sanitation practices ($n=3$ articles). Six interventions were conducted using a theoretical framework, including Social Learning Cognitive Theory ($n=3$ articles), Achievement Goal Theory ($n=2$ articles), and Theory of Planned Behavior ($n=1$ article). Youth participants experienced statistically significant improvements in levels of health knowledge from baseline to post-intervention in nine of the ten articles included in this review.

Discussion: Results suggest that sport can be utilized as an effective platform for health promotion and education among youth in Africa. Future studies have a strong foundation of research to expand upon specifically with regard to the application of theory. Considering the concerning statistics regarding disease and child mortality in Africa, the use of sport as a platform to educate children about essential health practices may serve an important role to improve overall health conditions of at-risk communities.

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RELATEDNESS, MOTIVATION, AND EXERCISE BEHAVIOR ACROSS VARIOUS EXERCISE MODALITIES

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Exercise is important for maintaining mental and physical health, and prevents diseases related to a sedentary lifestyle. It is vital to examine motivation to exercise and the impact of three basic psychological needs (autonomy, competency, and relatedness) on this motivation. While competency and autonomy have consistently impacted motivation to exercise, information regarding relatedness and group cohesion is lacking. The present study examined the relationship between exercise modalities (with differing degrees of relatedness), the fulfillment of basic psychological needs, and the motivation to engage in exercise among participants ($N=102$; age $M=41.2$, $SD=14.0$; BMI $M=28.3$, $SD=6.2$; 75% Female, 87% White) from community exercise facilities in the Midwest. Participants completed surveys assessing exercise behavior, fulfillment of basic psychological needs (PNSE; Wilson, Rogers, Rogers, & Wild, 2006), degree of motivation to exercise (BREQ; Mullen, Markland, & Ingledew, 1997), relatedness to others (ROPAS; Wilson & Bengoechea, 2010), and group cohesion and integration (PAGEQ; Estabrooks & Carron, 2000). We found that the basic needs of competency ($r=.49$, $p<.01$) and relatedness ($r=.52$, $p<.01$) were positively correlated with internalized levels of motivation. Exercise frequency ($r=.34$, $p<.01$) and intensity ($r=.24$, $p<.05$) also positively correlated with internalized motivation. Relatedness to others had a moderate positive correlation with internalized motivation ($r=.38$, $p<.01$), and group cohesion also had a moderate positive correlation with internalized motivation ($r=.40$, $p<.01$). Individuals in group exercise classes, especially CrossFit, reported significantly higher levels of competency ($F(2, 99) = 3.22$, $p=.044$, $\omega=.204$), general relatedness ($F(2, 99) = 5.35$, $p=.006$, $\omega=.280$), relatedness to others in exercise ($F(2, 99) = 9.25$, $p=.000$, $\omega=.373$), group cohesion ($F(2, 99) = 3.22$, $p=.044$, $\omega=.204$), group integration ($F(2, 99) = 9.94$, $p=.000$, $\omega=.386$), frequency of exercise ($F(2, 99) = 3.12$, $p=.049$, $\omega=.200$), and intensity of exercise ($F(2, 99) = 4.811$, $p=.010$, $\omega=.264$) compared to individuals exercising alone. The findings support efforts toward group exercise promotion as a potential way to sustain exercise behavior in that perceived relatedness to others and group cohesion in community exercise facilities may increase motivation to exercise. It is imperative to capitalize on community connectedness for exercise promotion.

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THE EFFECTS OF PARENTAL STRESS AND FAMILY COMMUNICATION ON LEVELS OF PHYSICAL ACTIVITY AMONG HISPANIC ADOLESCENT BOYS VS. GIRLS

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Emerging research shows a negative association between parental stress and adolescent physical activity (PA) levels. However, there is a dearth of research examining the role of family communication on this relationship. Additionally, given that previous studies show PA levels are higher among boys versus girls, it is also important to understand whether and to what extent the effects of parental stress and family communication on Hispanic adolescents' PA vary by gender. Therefore, the objective of this analysis is to examine 1) the direct effects of family communication and parental stress on adolescents' PA, 2) whether family communication moderates the relationship between parental stress and PA, and 3) determine whether the model in #2 varies by gender.

Baseline data from Hispanic adolescents (N=280, 52% female, 13.0 ± 0.8 years old, BMI=28.1 ± 6.1 kg.m²) and their parents (88% female, 44.9 ± 6.5 years old) from an ongoing obesity prevention study were analyzed. To examine the study's objectives, three models were estimated. The first model examined the direct effects of parent-reported parental stress and parent-reported family communication on adolescent reported PA. The second model added a two-way interaction between parental stress and family communication to the previous model. Finally, a multiple-group model assessing for potential gender differences was estimated. Analyses were conducted using Mplus (V8) using Full Information Maximum Likelihood Estimation.

Results from the first model show that there was a negative relationship between parental stress and adolescent PA level ($\beta = -0.042$, $t = -2.013$, $p = 0.044$) as well as a positive relationship between family communication and PA ($\beta = 0.102$, $t = 2.404$, $p = 0.016$). The second model showed that the interaction between parental stress and family communication on adolescent PA level was significant ($\beta = 0.027$, $t = 2.688$, $p = 0.007$) indicating that the association between parental stress and PA was stronger for youth with low levels of family communication. The multiple-group model showed that the interaction in model #2 was significant for boys ($\beta = 0.034$, $t = 2.138$, $p = 0.032$) but not for girls. Results here emphasize the importance of targeting family communication and reducing parental stress as it relates to Hispanic adolescent boys' physical activity.

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UNPACKING THE INTENTION-BEHAVIOR GAP DURING THE INITIATION OF REGULAR EXERCISE

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Objective: Many people intend to change health behaviors but often fail to take action on their intentions – known as the “intention-behavior gap” (Sheeran, 2002). The existence of this phenomenon is well established across health behaviors, including exercise. However, there are important aspects of the intention-behavior gap during the initiation of regular exercise that are not well understood. In this study, we addressed the following questions during the first week of regular exercise initiation: (a) How prevalent are planned but not completed (skipped) exercise sessions? (b) Do different types of motivation at initiation predict frequency of skipped sessions? (c) Are the reasons cited for skipped sessions consistent with those motivations?

Methods: Physically underactive but otherwise healthy adults (N=87) enrolled in an exercise intervention and were instructed to engage in aerobic exercise for 30 minutes per day, 5 days per week (ACSM, 2011). At baseline, participants self-reported two types of motivation: autonomous motivation (i.e., value of a behavior integrated into sense of self), and controlled motivation (i.e., engaging in a behavior for external reasons such as perceived approval from others). During the first week of the intervention, daily exercise behavior was reported. If participants did not exercise on a given day but reported an intention to exercise, this was coded as a skipped workout. Participants were then prompted to indicate the reason they did not exercise. The number of skipped sessions was regressed simultaneously on autonomous and controlled motivation (using a Poisson distribution), controlling for intervention condition.

Results: Overall, 49 participants (56%) reported at least one skipped session (range: 0–5). Both autonomous (OR = .83, 95% CI = .69, 1.00, $p = .05$) and controlled motivation (OR = 1.20, 95% CI = 1.04, 1.39, $p = .01$) significantly predicted the number of skipped workouts. Reasons individuals did not exercise as intended were as follows: too busy (33%), didn't want to exercise (17.5%), tired (15.5%), sick (10.7%), and other (23.1%).

Conclusion: Results suggest skipped exercise sessions are prevalent during the first week of regular exercise initiation, and autonomous and controlled motivation predict a decrease and an increase, respectively, in the number of skipped exercise sessions. The most frequently cited reasons for skipped sessions are consistent with lower levels of autonomous motivation.

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USING COMPUTER VISION TO PROVIDE AUTOMATED ECOLOGICAL ASSESSMENT OF PHYSICAL ACTIVITY: ADVANCING DIRECT OBSERVATION

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Technological advances provide opportunities for automating direct observations of physical activity, which would require less manpower and allow for ongoing monitoring and feedback. This pilot study evaluated initial validity of computer vision algorithms for providing automated ecological assessment of physical activity. The sample comprised 110.5 minutes per camera (three cameras in total) of video capturing up to nine participants engaged in sitting, standing, walking, and jogging in an open outdoor space while wearing an ActiGraph GT3X+ accelerometer. The data were collected across different times of day on three different days. Computer vision algorithms were developed to assess the number of people sedentary and in moderate to vigorous activity (MVPA), and group-based total metabolic equivalents of tasks (MET)-minutes in the scene. Bias/difference values, standard deviations (SD) of the bias, and intraclass correlation coefficients (ICC) assessed criterion validity compared to accelerometry for each minute of time, separately for each camera. On average, minute-level estimates for the number of people sedentary were within 1.8–4.1% and in MVPA within 5.8–8.9% of the criterion. Estimates of total MET-minutes in the scene were within 9.3–17.1% of the criterion. ICCs were excellent (≥ 0.82) for the number of people sedentary and in MVPA, and good for total MET-minutes (0.68–0.79). SDs around the bias were 19.5–32.4% for the number of people sedentary and in MVPA, and 42.8–49.4% for total MET-minutes. Bias estimates did not vary across cameras by more than 7.8%, and ICCs by more than ± 0.11 . The computer vision algorithms had acceptable sample-level validity (i.e., across a sample of minutes) as indicated by small (0.60) ICCs. This small pilot study shows proof of concept for automating direct observation measures of physical activity using computer vision, but further development and testing is needed before such tools can be used in a diverse range of settings. Automated ongoing assessment of physical activity in open spaces would allow for rapid feedback to support adaptive interventions and inform practice, and be particularly advantageous when manpower to conduct direct observations is limited.

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A FAITH-BASED MIND-BODY INTERVENTION TO INCREASE PHYSICAL ACTIVITY, REDUCE SEDENTARY TIME, AND REDUCE STRESS IN RURAL ADULTS

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The purpose of this study was to explore the feasibility and efficacy of *Harmony & Health* (HH), a culturally-adapted yoga-based mind-body intervention to increase physical activity (PA), reduce sedentary time, and reduce stress, among a diverse sample of adults in a rural/nonmetro setting. HH capitalized on an existing partnership with a predominantly African American church and the faith-based community to recruit a diverse sample of men and women who were at least 18 years old, overweight or obese ($BMI \geq 25.0 \text{ kg/m}^2$), and insufficiently active (doing $N=144$) expressed interest in HH, of which 60 (41.7%) were eligible to participate and 46 (76.7% of those eligible) completed a baseline health assessment and were enrolled in the study. Participants (M age= 49.2 ± 13.5 years) were mostly women (84.8%), non-Hispanic white (47.8%) or African American (45.7%), high socioeconomic status (65.2% completed a bachelor degree or more and 37.2% reported an annual household income $\geq \$80,000$), and obese (M $BMI=32.6 \pm 5.8 \text{ kg/m}^2$). Although there were no significant changes in PA from baseline to post-intervention, participants reported less sitting time on weekdays ($\Delta=-1.6$ hours/day, $t=-3.121$, $p=.004$) and weekends ($\Delta=-1.9$ hours/day, $t=-3.864$, $pt=-2.399$, $p=.022$), and fewer depressive symptoms ($t=-3.547$, $p=.001$) at post-intervention. Non-Hispanic white participants reported increases in moderate-intensity PA ($\Delta=907.3$ MET-minutes/week) from baseline to post-intervention compared to African American participants ($\Delta=907.3$ vs. -620.4 MET-minutes/week, respectively; $F_{2,21}=5.001$, $p=.017$). Findings suggest that HH was feasible and effective at reducing sedentary time and stress in a diverse nonmetro sample, regardless of ethnicity. HH is an innovative way to intertwine spirituality, mind-body practices, and PA in an effort to improve physical and psychological health and reduce health disparities in ethnic minority and rural populations.

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“LITTLE EXERCISE IS BETTER THAN NO EXERCISE”: MULTIPLE MEASURES OF PHYSICAL ACTIVITY AMONG OLDER AFRICAN AMERICAN WOMEN

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Introduction: The World Health Organization (WHO) recommends that adults aged 18–64 years old exercise at least 150 minutes of moderate-intensity aerobic physical activity (PA) throughout the week, however the WHO does not provide recommendation for adults 65 years of age or older. African Americans (AAs) are disproportionately affected by several chronic conditions (e.g., T2D, CVD, and disabilities) when compared with other racial groups. Assessment of physical activity among aging adults is of particular public health significance because there are a wide variety of fitness levels in this age group, and the presence of chronic conditions may limit participation in physical activity. This multi-methods study explored the subjective and objective influence PA among older African American women.

Methods: Multi-methods approach with a triangulation design using the convergent model was used to explicitly merge qualitative and quantitative data to examine PA among African American women. Community-dwelling females provided data on their weekly activity patterns and completed a 7-day PA diary. Semi-structured interviews were used to explore the ways the participants engaged in PA. Descriptive analysis was conducted to examine subjective and objective PA levels. Interviews were audio-taped, transcribed verbatim, and data were analyzed with narrative analysis.

Results: The mean age of the female participants was 69.6 years of age (SD = ±8.0 years) and the average number of chronic condition was 2.5. African American women participated in low level physical activity (75 ± 20 min), they were more likely to engage in PA during the morning rather than in the afternoon or evening. Housework and walking were the common form of physical activity. Most of the participants stated that they need to exercise more but “a little PA is better than no PA.”

Conclusion: The study sheds light on the complexity regarding the perception of PA among older chronically-ill African American women. The perceived quality and accessibility of the built and natural environments influenced neighborhood activity in older adults. However, the focus of PA should not be on “quantity” but “quality.” The results may have implications in designing specific supportive PA programs for older African American women residing in urban neighborhoods.

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ACTIVO: RANDOMIZED TRIAL OF A PHYSICAL ACTIVITY INTERVENTION FOR LATINO MEN

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Background: Compared to non-Latino White men, Latino men report lower engagement in physical activity (PA) and experience markedly higher rates of diabetes, obesity, and other conditions related to inactivity. Despite these disparities, Latino men have been largely absent from PA interventions. We previously showed that an individually tailored theory-based mail-delivered Spanish language PA intervention could significantly increase PA in underactive Latina women. In the current study, we modified this intervention for Latino men based on formative research and added an interactive text messaging component, then tested this multimedia intervention in a small randomized controlled trial.

Methods: Participants were 46 Latino men randomized to Intervention (n=22) vs. Control (N=24) arms. Intervention participants completed monthly questionnaires and received individually tailored PA materials through the mail and received interactive text messages. Controls received materials via mail and SMS messages on wellness topics other than PA, including healthy eating, weight control and stress management, matched for contact time. PA was measured at baseline and 6-month follow-up using ActiGraph GT3X+ accelerometers and the 7-Day Physical Activity Recall.

Results: Participants were 43 (+/-10.7) years old and 87% self-identified themselves as Mexican. The majority had at least some college level education (57%), were employed at least part time (87%), were first generation (85%) and spoke more Spanish than English in the home (70%). There were no between-group differences in demographic characteristics or baseline physical activity (p's>.05). Median objectively measured moderate-to-vigorous physical activity (MVPA) increased from 10.0 at baseline to 57.5 6 months (6m) among Intervention participants and from 21.0 to 23.0, respectively, among Controls. Quantile regression indicated a significant between-group difference in median objectively measured MVPA at 6m, b=37.5 (18.0), p=.04. At baseline, median min/week of self-reported MVPA was 10.0 for Intervention participant and 5.0 for Controls. At 6m these increased to 95.00 among Intervention participants and 52.5 among Controls. There was a trend favoring greater increases in the Intervention arm's median minutes/week of self-reported MVPA at 6m (p=0.10), with Intervention participants reporting a median 42.4 minutes/week more than Controls after adjusting for baseline. Correlations between self-reported and objectively measured MVPA were borderline significant at baseline (rho=.28, p=.07) and significant at 6m (rho=.49, p=.01).

Conclusions: The intervention showed potential efficacy for increasing PA in this underactive sample of Latino men. The next steps in this line of work are to test this intervention in a larger randomized trial and assess potential for broad dissemination.

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CONFLICTING OR FACILITATING GOALS: DIFFERENCES IN ADULTS' SOCIAL COGNITIONS AND EXERCISE OVER TIME

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A better understanding of the self-regulation of exercise is needed since most adults do not meet the public health recommendation of 150+ minutes of moderate-vigorous exercise each week. Exercise does not occur in isolation, as adults often set multiple concurrent exercise and non-exercise goals that they wish to pursue during their leisure time. Social cognitive theory (SCT) contends that whether concurrent goals are perceived to be in conflict or facilitation with one another may affect successful exercise self-regulation; conflicting goals may be more challenging to regulate than facilitative goals. As a result, adults who hold concurrent conflicting goals may report lower adherence-related social cognitions, including self-regulatory efficacy and the likelihood and value of positive proximal outcome expectations and exercise less than those holding facilitative goals. Our prospective SCT-based study examined whether adults ($N = 191$; $M_{age} = 31 \pm 12$ years) who reported their exercise and non-exercise goals conflicted or facilitated differed in their self-regulatory efficacy to manage multiple goals at the same time, outcome expectations, and exercise. Participants completed online measures of efficacy, outcome expectations, and exercise at study onset. Exercise was assessed again one month later. Participants who perceived their goals conflicted ($n = 100$) or facilitated ($n = 91$) formed comparison groups. A between groups MANCOVA with Time 1 exercise as a covariate and social cognitions and exercise as the dependent variables was significant, ($p < .0001$; $\eta^2_{partial} = .17$). Follow-up ANOVAs revealed that the group with conflicting goals reported significantly lower self-regulatory efficacy and exercised less at Time 2 compared to the group with facilitating goals (p 's $< .05$; $\eta^2_{partial} = .14$ and $.03$). Outcome expectations did not significantly differ. Findings provide first evidence that self-regulatory efficacy is a key differentiating social cognition between those who hold conflicting or facilitating goals. If study findings are replicated, at least two intervention avenues exist. First, when individuals have conflicting goals, increasing their self-regulatory efficacy may be beneficial. Second, intervening to help adults set at least some facilitative goals (e.g., exercise and socialize at the same time) may also be beneficial. Such intervention approaches should help adults learn to better self-regulate their exercise alongside their non-exercise leisure time goals.

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EXAMINING PHYSICAL ACTIVITY INFLUENCES WITHIN AFRICAN AMERICAN AND HISPANIC COMMUNITIES

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In the U.S., health disparities are most prevalent among racial/ethnic minority groups. Compared to whites, African Americans and Hispanics are more likely to be obese and are less likely to meet current physical activity (PA) guidelines. This study examined factors that influence PA levels among African American and Hispanic participants enrolled in two distinct but conceptually similar, community-based health education programs implemented through the Delaware Cooperative Extension Agency.

Methods: 112 adult participants (≥ 18 years) completed baseline and 3-month post-test measures that included height/weight. Additional questionnaires assessed demographics, PA stage of change PA self-efficacy, and Godin PA score. Weight loss over the 3 months was calculated for all participants. Subsequent analyses were conducted for those who lost weight during the program ($n=62$) by racial/ethnic group. Bivariate correlations were used to identify variables that were significantly associated with Godin PA score at the end of the program. Predictors of PA were examined with linear regression analyses.

Results: Of the 62 participants included in the analysis, 31 identified as African American and Hispanic, respectively. Participants were middle aged (52.71 ± 16.55 years) and mostly female (73.4.9%). Weight loss for the overall sample was significant (4.4 ± 6.8 lbs; $p=.002$) and there were nonsignificant changes in PA self-efficacy and PA stage of change ($p>.05$) from baseline to end program. There were no significant difference between groups in Godin PA, weight loss, BMI, or PA stage of change ($p>.05$), but a near significant difference in PA self-efficacy ($p=.052$) was found. Among Hispanics, PA self-efficacy and BMI were correlated ($p<.001$) with Godin PA score and both variables were significant predictors of Godin PA score at post-test in the linear regression model ($R^2 = .52$, $p = 0.001$). For African Americans, age and PA stage of change were significantly correlated with Godin PA scores at post-test ($p,.05$), but age was the only significant predictor of PA Godin score at post-test ($R^2 = .44$, $p = 0.05$).

Conclusion: Findings support some theoretical association between PA self-efficacy, PA stage of change and overall PA in a diverse minority population who participated in a community based program. These findings varied by racial/ethnic group suggesting a need for further tailoring of programs to effectively meet the needs of community populations.

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EXERCISE CAPACITY OF ACTIVE VIDEO GAME PLAY IN HEALTHY-WEIGHT CHILDREN VS. OVERWEIGHT-OBESE CHILDREN

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Replacing sedentary screen time with active video game (AVG) play is a recent strategy to reduce children's sedentary behavior. Few studies have evaluated overweight-obese children (OOC), who may have different patterns of body movements and physiologic and metabolic responses when compared with healthy-weight children (HC) during AVG play. We aimed to measure physiologic and metabolic parameters of playing three Xbox One AVGs requiring different body movements among age- and gender-matched OOC and HC.

Thirty-one children [M=9.7y, SD=1.5 / 15 OOC (56% m); 16 HC (53% m)] played three AVGs: *Fruit Ninja* (upper-body movement, UM), *Shape Up* (lower-body movement, LM), and *Kung-Fu for Kinect* (whole-body movement, WM) for 10 min per AVG. Participants wore ActiGraph accelerometers on non-dominant wrist and waist for step count, a Polar heart rate monitor (HR, beats/min), and a face mask attached to a Cosmed metabolic cart for oxygen uptake (VO_2 , ml/kg/min), respiratory exchange ratio (RER, VCO_2/VO_2), energy expenditure (EE, kcal/10min), and metabolic equivalent (MET, $3.5 \text{ mlO}_2/\text{kg}/\text{min}$).

Across all AVGs, step counts and HR were not different between OOC and HC; however, metabolic parameters were significantly different. The data means are presented in the following order: UM, LM, WM. MET was significantly lower in OO (5.0, 6.2, 5.7) than in HC (6.5, 8.6, 7.9) during each AVG play ($p < .05$). AVG play resulted in moderate-vigorous (MV) physical activity (PA) in OOC while producing vigorous-intensity (V) PA in HC. OOC had less aerobic capacity ($p < .05$) as indicated by a lower VO_2 (17.8, 22.6, 20.4) than HC (22.8, 30.3, 28.0). RER was higher in OOC than HC during LM play (0.94 vs. 0.88, $p < .05$). OOC ($p < .05$) had more EE (48.0, 60.7, 53.8) than did HC (35.3, 47.8, 42.9). When corrected for body weight, however, OOC expended less energy expressed in kcal/kg/10min than HC ($p < .05$) when playing all AVGs (0.9, 1.07, 0.97 vs. 1.16, 1.47, 1.33). Among the three AVGs, $\text{VO}_2F=46.2$, $\text{METF}=39.3$, and $\text{EEF}=20.3$ ($p < .01$) were the highest in LM and the lowest in UM.

We found differences in metabolic parameters between OOC and HC, suggesting that OOC could have lower aerobic capacity and reach fatigue status faster, though expending less energy than HC during the same AVG play. AVGs that require upper, lower, or whole body movement could be effective for increasing total EE and achieving MVPA among overweight-obese children, thereby improving their aerobic capacity for obesity prevention.

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EXPLORE EFFECTS OF FREE-LIVING PHYSICAL ACTIVITY ON NEXT 24-HR GLUCOSE PATTERNS USING MOBILE GLUCOSE MONITORS IN NON-DIABETICS

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Background: Structured exercise (e.g., high intensity interval training) performed in controlled lab settings has been shown to decrease postprandial glucose levels in both diabetic and non-diabetic populations. Less is clear about the effects of non-structured, free-living physical activity on subsequent glucose patterns. Using an accelerometer and continuous glucose monitor (CGM), the current study aims to explore whether objectively measured physical activity level is associated with glucose patterns within the next 24-hr period in a sample of non-diabetics. This information could inform the development of future physical activity interventions using glucose as a biological marker to illustrate the acute benefits of physical activity.

Methods: Thirty participants (age=37.9 [SD=13.2] years, 73.3% female, 66.7% overweight/obese) completed a 7-day monitoring period. Blood glucose was recorded every 5 minutes using the Dexcom G4 PLATINUM CGM system. Activity level was objectively assessed using an Actigraph accelerometer that was worn on the waist during waking hours. Participants also kept a food log using MyFitnessPal. Multilevel linear regression models were used to examine the effects of moderate-to-vigorous physical activity (MVPA) on next day's morning fasting glucose and 24-hr mean amplitude of glycemic excursions (MAGE), which indicates the glucose variability from peaks to nadir. Weight status was tested as a moderator. All models additionally controlled for gender, age, and total daily carbohydrate intake.

Results: Participants on average spent 30.6 (SD=28.2) minutes in MVPA per day. Prior day MVPA minutes did not affect fasting glucose the next morning. However, participants who typically had higher MVPA minutes compared to others in the sample, had marginally lower average MAGE ($b=-.008$, $SE=.004$, $p=.06$). Further, compared to normal weight participants, overweight/obese participants who engaged in some (vs. no) MVPA the prior day, had marginally lower MAGE over the next day ($b=.66$, $SE=.39$, $p=.09$).

Discussion: The preliminary findings from this study demonstrate the feasibility of collecting continuous glucose data among free-living non-diabetics and its integration with objectively assessed physical activity data. Together, this information could be used to provide just-in-time behavioral guidance as a strategy for future physical activity interventions.

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IMPROVEMENTS IN PHYSICAL FUNCTION AND FITNESS: RESULTS FROM A RURAL COMMUNITY-RANDOMIZED TRIAL

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Objective. To evaluate the effects of a six-month diet and exercise-focused heart-health lifestyle program on functional fitness and physical function among midlife and older women, and examine possible differential effects on midlife (59 years) and older women (>60 years).

Methods. Sixteen medically underserved rural towns in Montana and New York were randomized to one of two six-month intervention programs: a twice-weekly experiential-learning health behavior change program focused on diet and physical activity behaviors, *Strong Hearts, Healthy Communities (SHHC)* (n=101) or a monthly healthy lifestyle education-only, minimal intervention control program (n=93). Sedentary overweight or obese females aged 40 years or over were recruited to the study. SHHC physical activities included aerobic exercise (e.g., indoor/outdoor walking; aerobic dance)—starting low-to-moderate, transitioning to moderate-to-vigorous intensity—and progressive strength-training exercises for the upper body, lower body, and core. Progressive strength training (10–20 minutes; two sets of ten repetitions) of major muscles groups, such as squats, lunges, bicep curls, and chest press, was included in approximately two-thirds of the SHHC classes. Functional fitness tests included the arm curl, chair stand, and step test from the Senior Fitness Test (Rikli and Jones, Human Kinetics, year?) and the 10-item physical function quality of life subscale of the SF-36.

Results. SHHC participants (n=82) improved significantly compared to control participants (n=69) on the chair stand and step test, as well as physical function related quality of life scores in multivariate regression analyses that controlled for site and baseline sociodemographic characteristics. SHHC participants did not improve on the arm curl when compared to control participants. These results were the same in subset analyses that stratified women aged 59 and younger versus 60 and older, in terms of significance and magnitude.

Conclusion. The SHHC program was superior in improving physical fitness and function compared to a control program, and despite a relatively modest dose of strength training, both younger and older participants made significant improvements in the measured domains of lower body strength and aerobic fitness as well as the self-reported domain of physical function related quality of life, including lifting or carrying groceries, bending, kneeling or stooping, and moderate and vigorous activities.

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PHYSICAL ACTIVITY AND THE SELF-AS-DOER IDENTITY: THE MEDIATING ROLE OF INTRINSIC MOTIVATION FOR VIGOROUS BEHAVIORS

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Introduction: Physical activity (PA) reduces the risks of obesity, yet two-thirds of Americans are not meeting recommended PA levels. PA interventions often demonstrate initial changes in PA, but maintenance of that change proves challenging. Lack of motivation is often cited as a reason for not engaging in PA. As such, attempts to reduce disease risk and promote PA should consider factors that affect motivation and maintenance of behavior change. One such factor is the self-as-doer. The self-as-doer, a motivational identity which aims to describe the individual in terms of *doing* a behavior, predicts PA behaviors, but little is known about the mechanisms by which it does so. Theoretically, the self-as-doer may be changing PA levels by increasing intrinsic motivation to engage in behavior, but this has yet to be explored. Therefore, the aim of the current study was to explore whether intrinsic motivation would be a mediating factor in the relationship between the self-as-doer identity and PA.

Methods: Participants, 203 adults ages 18–49 (M=20.07, SD=3.05), completed a survey and a writing activity assessing the self-as-doer for PA. Mediation analyses using bootstrapping procedures were conducted to test the indirect effect of the self-as-doer identity on PA through intrinsic motivation.

Results: Intrinsic motivation was a significant mediator, with a small effect size, of the relationship between the self-as-doer identity and vigorous PA, (b=375.62 BaCa CI[229.85, 559.71], $R^2 = .04$), but not for moderate PA, (b=77.96 BaCa CI[-.84, 176.05], $R^2 = .01$), or walking behaviors, (b=-32.40 BaCa CI[-.08, .10], $R^2 = -.0004$).

Discussion: Results demonstrate that the self-as-doer affects PA behaviors by increasing intrinsic motivation, but only for vigorous behaviors. Although research has demonstrated that increasing one's intrinsic motivation for PA increases those behaviors, this is the first to demonstrate that a self-as-doer identity can increase intrinsic motivation which then increases PA behaviors, at least for vigorous behaviors. That is, calling oneself an “exerciser” or “walker” may be the catalyst needed to develop intrinsic motivation for vigorous behavior. That intrinsic motivation did not mediate the relationship between the self-as-doer and moderate or walking behaviors might suggest that these behaviors do not require the same degree of motivation to enact as vigorous behaviors. Future researchers should explore the causal effects of this relationship.

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POST-CURRICULUM TRAINING ATTITUDES, PERCEPTIONS, & BARRIERS FOR CLASSROOM-BASED PHYSICAL ACTIVITY AMONG PRE-SCHOOL TEACHERS

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Background: Overweight/obesity is increasing in U.S. preschool children. Childcare programs represent an important venue for intervening on health-related behaviors among children given that children spend approximately 30 hours/week in non-parental care. Effective strategies are needed to build capacity among preschool teachers for incorporating healthy behaviors in childcare programs.

Objective: This study evaluates preschool teachers' attitudes, perceptions, and perceived barriers for integrating classroom-based physical activity following training for the *Let's Wiggle with 5-2-1-0* curriculum.

Methods: Preschool teachers were recruited from childcare centers in NW Florida for a 2-hour *Let's Wiggle with 5-2-1-0* workshop to train teachers to integrate physical activity during classroom circle time. Pre- and post-assessment data were collected 1 week before and 6 weeks after the workshop. Assessments included teacher demographics; School Physical Activity Promotion Attitude Questionnaire (SPAPAQ); School Physical Activity Promotion Competence Questionnaire (SPAPCQ); and the Barriers to Being Active Quiz.

Results: Seventy-three participants were trained from September 2016 to April 2017. Participants were primarily white (52%) or black (30%), female (100%), employed full time (84%), had post high school education (73%), and had been employed in childcare for 14.0 ± 9.6 years. We observed post-training improvements ($p < 0.05$) in teachers: 1) understanding their role in promoting physical activity at school; 2) helping children adopt lifelong physical activity habits; and 3) improving their knowledge of physical literacy. At baseline, teachers generally self-reported that they had some/few skills in performing tasks related to physical activity. After training, teachers reported improved perceived competence in all 13 areas ($p < 0.05$). Prior to the workshop, teachers reported three barriers to physical activity: lack of will power, lack of energy, and lack of time. Following training teachers reported statistically significant decreases in lack of time, lack of social influence, lack of energy, lack of willpower, and lack of resources ($p < 0.05$).

Conclusion: The *Let's Wiggle with 5-2-0-1* training workshops positively influenced preschool teachers' attitudes, perceptions, and barriers in integrating physical activity in a classroom setting. Additional data are needed to understand if improved teacher confidence leads to increased classroom physical activity among preschool children.

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PRELIMINARY TEST OF TARGETING OUTCOME EXPECTATIONS TO INCREASE EXERCISE AMONG BREAST CANCER SURVIVORS

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Most breast cancer survivors do not exercise enough to experience the associate benefits such as decreased recurrence risk, mortality, and improved quality of life. Interventions are needed to increase levels of exercise among this population. Potentially powerful interventions may be those focused on exercise outcome expectations (OEs) (i.e., what people expect to obtain or avoid by engaging in a behavior). OE dimensions include 1) importance – value placed on the outcome(s); 2) certainty – perceived probability outcome(s) will occur; and 3) accessibility – the frequency with which outcome(s) are considered. This RCT is a preliminary test of an intervention aimed to increase exercise OEs.

Participants were recruited at a tertiary cancer center in the southeastern United States and randomized to an attention control or intervention arm. Intervention arm participants received a researcher-created exercise OE booklet containing narrative messages, writing and thinking activities intended to increase OE dimensions. Attention control participants received a similar booklet, focused on diet. OEs, self-efficacy (i.e., a theoretically significant covariate), and exercise were measured at baseline, 4-, 8-, and 12-weeks post intervention, through online surveys and an accelerometer. Multi-level models were constructed using SAS proc mixed and effect sizes were calculated for each outcome.

The sample is 74% white, 26% black, an average 58 years old and 2.5 years post cancer treatment. Intervention effects include: a 0.01 point increase of overall OEs, OE accessibility, certainty, importance and exercise intentions ($p = 0.3555$), ($p = 0.6578$), ($p = 0.5026$), ($p = 0.0002$), ($p = 0.6254$); a two minute increase in weekly exercise minutes ($p = 0.2676$); and 970 increase in weekly steps ($p = 0.0283$), every four weeks in the intervention arm compared to the control arm. All effect sizes were small ranging from 0.01 to 0.09.

This is the first study to focus solely on targeting OEs to increase exercise among breast cancer survivors. Exercise is a very difficult behavior to change, thus the modest effect sizes in this study are not surprising. All intervention effects were in the intended direction. The 970 weekly step increase, every 4 weeks in the intervention arm compared to the control arm, may be clinically significant as it may equal an increase of roughly 10 minutes or ½ mile of walking every four weeks to total an increase of 40 minutes of exercise in the intervention arm over the course of the study. Regardless of the total amount of exercise, higher activity levels are related to improved health outcomes. Overall, findings from this study support the utility of targeting OEs to increase exercise among breast cancer survivors.

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PSYCHOLOGICAL AND ENVIRONMENTAL INFLUENCES ON LEVELS OF PHYSICAL ACTIVITY IN WOMEN OVER 40

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Participation in physical activity provides long-term health benefits by improving physical and mental health. Although women over 40 would benefit the most from physical activity, they encounter the most barriers and, as a result, are the least physically active. The present study examined psychological and environmental predictors of physical activity among a group of 10,900 women over the age of 40 from the 2015 National Health Interview Survey (NHIS).

The study hypothesized that psychological well-being and connection to one's neighborhood (environment) would positively predict engagement in physical activity. The psychological well-being scale aggregates reversely coded questions regarding participants' feelings of negative psychological well-being prior to the survey. Neighborhood connection is measured as a composite scale of connection and support to one's neighborhood. Regression models examined how each predictor was associated with 3 types of physical activity: light/moderate, vigorous, and strength. Demographic measures (age, race and marital status) were added as control variables.

For light/moderate activity, a one-unit increase in psychological well-being and in neighborhood connection predicted a 2.01% increase and a 3.35% increase in participation, respectively ($p < .001$). Widowed women are expected to participate in light/moderate exercise 11.68% less ($p < .01$) than women who are married. Black/African-American women are expected to exercise 20.5% ($p < .001$) less than White women.

For vigorous activity, a one-unit increase in psychological well-being and in neighborhood connection predicted a 6.43% increase and a 5.89% increase in participation, respectively ($p < .001$). Widowed women are expected to participate in vigorous activity 16.08% ($p < .05$) less than women who were married.

For strength activity, a one-unit increase in psychological well-being and in neighborhood connection predicted a 3.45% increase and a 5.51% increase in participation, respectively ($p < .001$).

These findings indicate that a woman's age, psychological well-being and environmental connection all significantly predict the frequency of physical activity that she participates in.

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SELF-EFFICACY PREDICTS ADHERENCE TO THE FITBIT ZIP IN ETHNICALLY DIVERSE MIDDLE SCHOOL AGE GIRLS

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Introduction: Consistent with Social Cognitive Theory, studies shows that higher levels of self-efficacy are related to moderate to vigorous physical activity in children. The current study extends this research by investigating whether self-efficacy also influences adherence to monitoring physical activity with an activity-tracking device, the Fitbit Zip.

Methods: 314 middle school age ($M = 11.7$ years, $SD = .84$) girls of diverse ethnic backgrounds who completed a 3-week summer health promotion program that emphasized the importance of a healthy lifestyle served as participants. The girls received a Fitbit Zip on the 3rd day of the program and were instructed to wear it all day, every day, including weekends for a total of 17 days. On the days the Fitbit Zip was not worn or not worn for the entire day (e.g., worn for 2 hours), the distance was coded as missing/incomplete as neither was representative. Thus, in this study, adherence was quantified as the percentage of days without missing/incomplete data. Physical activity self-efficacy and covariates were assessed by self-report questionnaires at baseline.

Results: On average, girls were adherent 13.3 days (78.2% adherence rate). Girls had lower adherence on weekends, compared to program days ($t(313) = 19.45$, $p < .001$). A multiple regression model was tested, controlling for program variables, age, self-reported physical activity, maternal education, body mass index, parent marital status, ethnicity, and baseline health knowledge. Results suggest that baseline physical activity self-efficacy ($M = 10.3$, $SD = 2.5$) and covariates accounted for significant variability in Fitbit Zip adherence, adjusted $R^2 = .294$, $F(17, 281) = 8.30$, $p < .001$. Findings indicate that, controlling for covariates, baseline physical activity self-efficacy significantly predicted Fitbit Zip adherence. For every one-point increase in baseline physical activity self-efficacy, miss- ingness decreased by .28 days, 95% CI [-.43, -.13].

Conclusion: Girls with higher baseline self-efficacy were more adherent to wearing their Fitbit Zip. These findings suggest it may be of value to introduce a brief intervention to increase self-efficacy before providing participants with an activity-tracking device in a health promotion program. It is critical to ensure children are adherent to activity-tracking devices as research shows that increased usage of an activity-tracking device is related to higher levels of physical activity in children.

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SELF-ESTEEM MEDIATES THE RELATION BETWEEN PHYSICAL ACTIVITY AND ANXIETY IN YOUNG ADULT MALES

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Introduction. Research has shown that exercise has many physical and mental health related benefits. Increased anaerobic and aerobic exercise can improve mood, decrease symptoms of anxiety, and increase overall self-esteem (SE). However, why physically active individuals report lower anxiety than those who are inactive is not well understood. This study tested a model to determine whether SE mediates the relation between exercise and symptoms of anxiety.

Method. The participants were 137 undergraduate students at a medium-sized university, [$M(\text{age}) = 19.12$, $N(\text{males}) = 72$]. The sample was ethnically diverse, with 35% White. Participants completed the following self-report measures: a demographics survey, the State-Trait Inventory for Cognitive and Somatic Anxiety (STICSA), the Rosenberg Self-Esteem Scale, and a brief self-report of exercise behavior, including number of days and hours spent exercising per week.

Results. Males ($M = 6.99$, $SD = 6.56$) reported exercising more hours/week than females ($M = 4.63$, $SD = 3.88$; $t(134) = 2.53$, $p < .05$). Correlation analyses were run separately by gender. Higher SE was correlated with less anxiety for both females ($r(64) = -.64$, $p < .01$) and males, ($r(72) = -.53$, $p < .001$, respectively). However, for females neither the number of days nor the number of hours/week exercising was related to SE, although a trend ($p < .10$) was found such that spending more days exercising was negatively associated with SE. Conversely, for males both the number of days/week and hours/week spent exercising was correlated with higher SE ($r(72) = .35$, $p < .01$; $r(72) = .29$, $p < .05$, respectively).

This mediation analysis could not be run for females due to lack of significant associations amongst the variables. For males, the regression of number of hours of exercise on anxiety, ignoring the mediator, was significant, $b = -.29$, $t(72) = -2.66$, $p < .01$. The regression of number hours of exercise on the mediator, SE, was also significant, $b = .23$, $t(72) = 2.53$, $p < .05$. The mediator (SE), controlling for hours of exercise, was significant, $b = -.58$, $t(72) = -4.62$, $p < .001$. Controlling for the mediator (SE), hours of exercise was not a significant predictor of anxiety, $b = -.15$, $t(72) = -1.55$, $p = .12$. A Sobel test found that SE fully mediated the relationship between hours of exercise and anxiety ($z = -2.18$, $p = .03$). This model did not hold for number of days/week of exercise.

Discussion. These findings provide initial support for physical activity (PA) reducing anxiety in young men by positive influences on SE. The trend finding that females who engage in more PA actually reported decreased SE may indicate that females engage in PA as a method of coping, which is worth investigating further. It is interesting that there were no associations between PA and anxiety for females. Further investigation is needed to examine the gender difference and how to use this information for improving mental health in college students.

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THE EFFECT OF EXERCISE AND WELLNESS INTERVENTIONS ON PREVENTING POSTPARTUM DEPRESSION AND STRESS: THE HEALTHY MOM II TRIAL

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Approximately 10–15% of postpartum women and one-third of women who have a history of depression prior to pregnancy report postpartum depression. There is a need for low cost interventions designed to prevent postpartum depression among women at risk. The purpose of this study was to examine the efficacy of exercise and wellness interventions on preventing postpartum depression and perceived stress. Low active participants ($n = 450$) who were less than 8 weeks postpartum and had a history of depression prior to pregnancy were recruited via print, online, and email advertisements. Participants were randomly assigned to one of three groups: (1) 6-month telephone-based exercise intervention (based on self-determination and social cognitive theories); (2) 6-month telephone-based wellness/support intervention (e.g., healthy eating, sleep, and stress); or (3) usual care. Participants were 30.7 years of age on average and a majority completed at least some college (93%), were married (75%), reported an annual income above \$50k (56%), and were currently employed (68%). The sample was predominantly Caucasian (73%) with 20% identifying as Hispanic. Results indicated significant between-group differences for baseline age ($p = .01$) and depressive symptoms ($p = .03$) and therefore, these variables were included as covariates in subsequent models. Using generalized estimating equations (for binary depression outcome) and quantile regression (for continuous primary and secondary outcomes), potential between group differences for the outcome variables were examined. Analyses were conducted on the intent to treat sample, with all randomized participants included in the analysis. Overall, 2.4% of participants were depressed (based on the Structured Clinical Interview for DSM-IV Axis I Disorders; SCID-I) at 6 months and 3.6% at 9 months with no significant differences between groups. At 6 months, median depressive symptoms (based on the Edinburgh Postnatal Depression Scale) were significantly lower among wellness participants compared to usual care ($b = -1.00$, $SE = 0.46$, $p = .03$). There were no differences between exercise and usual care and exercise and wellness at 6 or 9 months. Regarding stress, the median perceived stress score at 6 months was significantly lower among exercise vs. usual care participants ($b = -2.00$, $SE = .98$, $p = .04$) and exercise vs. wellness ($b = -2.20$, $SE = 1.11$, $p = .04$) with no differences at 9 months. The wellness intervention was efficacious for preventing depressive symptoms relative to the usual care condition; however, depression was surprisingly low in all three conditions among this at risk sample of postpartum women. Exercise may have protective effect on perceived stress levels among women at risk for postpartum depression. Additional research is needed to better understand the effect of exercise on preventing both postpartum depression and stress.

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THE LONGITUDINAL EFFECTS OF SOCIAL CUES' INFLUENCE ON THE RELATIONSHIP BETWEEN GOAL-SETTING AND EXERCISE PERFORMANCE

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Building on research conducted by Heidrick and Graham (2017), the present study tested the longitudinal impact of affirmation of one's exercise goals. Heidrick and Graham (2017) reported short-term effects of social factors including feedback type, feedback presentation (human versus electronic), and social norms on exercise-related goal-setting and performance during a single exercise session. Their research demonstrated that young adults receiving affirmation from an experimenter for their stated exercise goals were more likely to achieve or exceed those stated goals compared with young adults receiving no acknowledgment. Further exploration revealed that this performance-enhancing effect of affirmation is likely attributable to the social portion of the feedback interaction, rather than the content of the affirmation message, as these enhancing effects were not witnessed when feedback was provided by a computer. The present study sought to explore the long-term effects of affirmative feedback vs. no feedback in a setting in which young adults performed the same structured exercises during two experimental sessions spaced one week apart. Seventy-one undergraduate students were recruited to participate in a randomized controlled longitudinal experiment. A researcher demonstrated four exercises (pushups, planks, jumping jacks, and single-leg balancing), after which participants set personal goals regarding their own intended performance of these exercises. Participants were randomly assigned to one of two conditions that determined their goal-related feedback from the experimenter during the first session: 1) Goal Affirmation in which the researcher looked over the participant's goals, nodded in approval, and said, "great;" or 2) Unacknowledged Goals in which the researcher placed the participant's goals face-down on a desk immediately upon receipt from the participant and the experiment proceeded. During the second session, the participants again recorded goals and completed the same four exercises; there were no differences between the conditions during session two. Results showed between-group differences in performance change between sessions; those in the Affirmation Condition improved their plank times by 6.1% ($M = 4.38$ seconds), relative to 4.3% in the Unacknowledged Condition ($M = 3.10$ seconds). A similar effect was seen for balancing (8.46 & 5.27 seconds, respectively). These effects were approaching significance for both planks ($p = .094$) and leg-balancing ($p = .109$). These results indicate that the performance-enhancing benefits of very brief affirmative feedback on exercise goals can persist into subsequent exercise sessions.

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C241

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THE WEIGH AFRICAN AMERICANS MOVE: AN ANALYSIS OF THE ASSOCIATIONS BETWEEN BODY IMAGE, STAGES OF CHANGE, AND PHYSICAL ACTIVITY.

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This study explored the associations between body image, exercise and weight stages of change, and physical activity (PA) in African American men and women. African American adults ($N=204$) completed anthropometric measurements and questionnaires on body image (perceived and desired), exercise and weight stages of change (SOC), and moderate-vigorous PA (MVPA). Perceived minus measured body image scores were categorized as inaccurate or accurate, and desired minus perceived body image scores were categorized as dissatisfied or satisfied. Adjusted linear regression models were used to explore associations among body image accuracy and satisfaction, SOC for exercise and weight loss, and MVPA. Most (74.0%) participants were women (M age=48.1 years, $SD=14.8$) and obese (M BMI=31.7 kg/m², $SD=7.8$). Nearly half (43.1%) of participants had completed a bachelor's degree or more, and 41.9% reported an annual household income greater than \$80,000. Over half (53.8%) of participants reported meeting PA recommendations of ≥ 150 minutes of MVPA/week. On average, participants perceived themselves as overweight (M perceived BMI=27.7 kg/m², $SD=5.8$) and desired to be normal weight (M desired BMI=24.0 kg/m², $SD=3.9$). Most (81.8%) participants perceived their body shape and size accurately, and 71.1% were satisfied with their body image. Despite over 50% of participants reporting meeting PA recommendations, nearly half (41.2%) reported being in the preparation SOC for exercise, and only 17.2% and 25.5% reported actively engaging in regular PA or maintaining a regular exercise routine. Conversely, 70.5% of participants reported being in the action or maintenance SOC for weight loss. A greater proportion of those who perceived their body shape and size inaccurately reported being in the precontemplation (29.7%) SOC for weight loss than those who perceived their body image accurately (15.1%; $\chi^2=8.060$, $p=.045$). Linear regression models revealed a significant association between perceived BMI and MVPA after controlling for gender and SOC for weight loss ($b=-.197$, $t=-2.866$, $p=.005$). Results suggest that the relationship between perceived body image and PA is influenced by weight loss SOC but not exercise SOC. Health promotion efforts are needed to reduce inaccurate perceptions of body shape and size in an effort to increase PA among African American adults.

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USING DIRECT OBSERVATION TO DETERMINE CHILDREN'S PHYSICAL ACTIVITY LEVELS IN VARIOUS OUTDOOR PLAY AREAS

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Outdoor play areas provide key opportunities for children to be physically active, learn new skills, and interact with peers. These opportunities increase children's health and facilitate development in a way that may lead to long-lasting, healthy behaviors. Even though outdoor play areas play an important role in children's health and development, little is known about how young children (< 36 months) interact with different outdoor play areas. Thus, the present study investigated children's time spent in various outdoor play areas and the physical activity (PA) level in each area. Children ($n = 52$) ages 0–36 months were observed at two childcare centers in a Midwestern city. Observation data was gathered in 15–30 minute increments over a five day period. A modified version of the Observational System for Recording Activity in Children – Preschool Version (OSRAC-P) was used to code and analyze children's location and PA levels. Locations included open areas without equipment (e.g., grass or turf play areas), areas that promoted gross motor development (e.g., large, metal playground; swing sets), and areas that promoted fine motor development (e.g., sandbox; small, plastic playground). PA levels included stationary, stationary with limb, slow-easy, moderate, or fast movement. A one-way ANOVA was conducted to determine differences in activity levels between play areas. Across all locations, children most frequently participated in slow-easy movement (35.1%). In regard to location context, children spent the majority of the time in open areas (54.3%) compared to fine motor (30.9%) and gross motor (14.8%). There was a significant difference in PA level based on location ($p < .05$), but contradict findings of a study examining indoor play in childcare centers (< 3 years old). Additional research is needed to explore the relationship between various types of play areas and PA levels of young children.

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USING ECOLOGICAL MOMENTARY ASSESSMENT TO UNDERSTAND DIFFERENCES IN ASSOCIATIONS OF EXERCISE TIME AND PSYCHOLOGICAL STRESS

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Psychological stress puts people at risk for acute health problems (e.g., headaches, influenza), chronic illnesses (e.g., heart disease), and all-cause mortality. Evidence suggests daily exercise may help reduce stress; however, some people may benefit more from exercise than others. For example, Fly-in, Fly-out (FIFO) workers, who commute long distances to work and stay on-site for consecutive days/weeks experience different daily stressors (e.g., long-work hours, fatigue) from their partners at home (e.g., loneliness, additional childcare and domestic responsibilities), and from university students (e.g., studying, financial strains). The aim of our study was to determine if the daily exercise-stress association differs between these groups.

We conducted an ecological momentary assessment study across three cohorts: university students ($n = 103$, 52% female, age: $M=22$, $SD=3$), FIFO workers ($n = 64$, 80% male, age: $M=40$, $SD=10$), and partners of FIFO workers ($n = 42$, 100% female, age: $M=39$, $SD=9$). Participants self-reported their psychological stress, time spent exercising, and time spent in work at the end of the day for up to 7 consecutive days. Multilevel modelling was conducted to test whether there were group differences in the between- and within-person associations of daily psychological stress and exercise after accounting for time spent working.

There were significant cohort differences in the association between exercise and stress at the daily level ($\gamma = -0.22$ & -0.17 , $p's < .05$). For university students, stress was highest on days when they exercised *more* than usual ($\omega = 0.11$, $p = .03$). For FIFO workers, there was no association between stress and daily exercise ($\omega = -0.06$, $p = .21$), and for FIFO partners, stress was highest on days when they exercised *less* than usual ($\omega = -0.12$, $p < .01$).

The association between exercise and stress varies, both in magnitude and direction, depending on people's daily life contexts. Further intervention work is needed to tease a part causality of this finding, but this evidence highlights the need for consideration of people's daily stressors when promoting exercise as a means for reducing psychological stress.

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CITATION AND MERITORIOUS AWARD WINNER

C244

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WHAT ARE THE COST IMPLICATIONS OF PHYSICAL ACTIVITY PROGRAMS FOR RURAL CANCER SURVIVORS?

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Background: Cancer survivors (CS) who exercise have better overall health and lower healthcare costs than their sedentary peers. Yet the time commitment and expense of exercise may offset these savings and cause CS to forgo exercise. In this study, we evaluate costs/expenses reported by rural CS participating in a 3-month exercise intervention (Better Exercise Adherence after Treatment for Cancer [BEAT Cancer]) that begins with supervised exercise sessions and transitions to independent exercise.

Methods: 15 female CS (post-primary cancer treatment) participating in BEAT Cancer at a rural community cancer center self-reported pre- and post-intervention frequency and average exercise duration, exercise-related travel distance and cost, exercise accessory costs, and healthcare visits and costs. Wilcoxon Signed-Rank and McNemar's tests compared pre- and post-intervention responses.

Findings: Participant mean age was 58 ± 12 years. Half (53%) were White and 47% were African-American; annual household income was $\leq \$20,000$ for 36%, $\$20,000 - \$50,000$ for 28%, and $\geq \$50,000$ for 36%. Most (66%) had breast cancer; 25% had Stage 0 - I, 58% Stage II, and 17% Stage III, 86% received surgery, 73% chemotherapy, and 67% radiation. Weekly minutes of moderate to high intensity exercise significantly increased from pre-intervention (median = 0) to post-intervention (median = 150, $p = 0.008$). A non-significant increase in monthly exercise expenses (e.g., gym fees, equipment costs, and miscellaneous exercise items) occurred from pre-intervention (median = \$0) to post-intervention (median = \$50, $p = 0.286$). The percent exercising at a gym (33% vs. 67%, $p = 0.031$) and travel miles per week dedicated to exercise significantly increased from pre- to post-intervention. A statistically significant decline in monthly self-reported physician visits occurred pre- to post-intervention (median = 3 vs. 1, $p = 0.016$) with a trend toward a decrease in monthly prescription costs from pre- to post-intervention (median = 24 vs. 20, $p = 0.099$). No significant difference in number of hospital visits was found.

Conclusions: Results suggest that in rural CS an increase in costs due to travel miles and gym attendance when participating in a facility-based exercise program may be offset by declines in healthcare expenses. Further research should examine these findings in larger studies to better understand the cost implications of such programs for survivors.

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RACISM AS AN ADVERSE CHILDHOOD EXPERIENCE [ACE]: IMPLICATIONS AND FUTURE DIRECTIONS

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According to the Southern Policy Law Center [SPLC] (2017), there are 917 active hate groups in the United States, a trend that appears to be increasing. This includes 130 KKK groups, 100 white nationalist groups, 193 Black separatist groups, 101 anti-Muslim groups, and 99 Neo-Nazi groups (SPLC, 2017). The SPLC notes that during the first ten days following the November 2016 American presidential elections, there were 867 reported bias-related incidents, including more than 300 that targeted Muslims or immigrants (Potok, 2017; SPLC, 2017). The majority of these reported incidents occurred on college campuses or in K-12 schools (Potok, 2017).

What is "racism"? How does it impact on the physical and mental health of developing children and adults? Is racism an "ACE"—an "Adverse Childhood Experience"? What are the long-term consequences of childhood exposure to racism? Are the effects intergenerational? Should race-based stress items be included in ACEs and other health-based psychosocial screenings? If yes, what are the possible consequences?

Using an ecobiodevelopmental framework (Shonkoff & Garner, 2012), and literature on ACEs, historical trauma, and epigenetics, the authors explore these topics in the context of childhood exposure to racism and discrimination. It is purported that the toxic stress of childhood exposure to racism can amplify the effects of other forms of potentially traumatic stressors, resulting in the increased likelihood of long-term and even intergenerational trauma transmission. Implications for screening for race-based stress are discussed in the context of health promotion and illness prevention.

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CFS ABSTRACT 2018

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Introduction: Symptoms such as persistent fatigue, pain and depression are highly prevalent among individuals diagnosed with Chronic Fatigue Syndrome (CFS). Previous research has shown that, compared to non-Hispanic whites (NHW), ethnic minorities diagnosed with CFS may experience more severe symptoms. As depression has been linked to somatic symptoms in chronic illnesses, the purpose of this study was to assess the associations between NHW and Hispanic (H) ethnic groups, depressive symptomatology, and the frequency, severity, and intensity of CFS-related symptoms.

Methods: Cross-sectional data were obtained from 116 ethnically diverse (NHW: n=81; H, n=35) individuals with a CFS diagnosis. All participants completed the Center for Epidemiologic Studies Depression Scale (CES-D), the CDC Symptom Inventory for CFS (CDC-CFS), and the Fatigue Symptom Inventory (FSI) as part of a longitudinal study investigating the efficacy of a remotely-delivered cognitive behavioral stress management intervention. Separate ANCOVAs explored the relationship between ethnicity, CES-D scores, and CFS-related symptomatology (via CDC-CFS and FSI) after accounting for covariates.

Results: Analyses revealed that, although there were no differences in reported CFS symptoms between ethnic groups alone, there was a significant ethnicity by CES-D score interaction with respect to multiple measures of CFS symptomatology. This suggests that there is a stronger positive relationship between depressive symptoms and CFS symptomatology among H individuals than among NHW individuals. This interaction was associated with both the symptom frequency subscale ($p < .05$) and symptom severity subscale ($p < .05$) of the CDC-CFS as well as the intensity of fatigue subscale ($p < .05$) of the FSI. No association was found in the fatigue interference subscale of the FSI. CES-D scores did not differ by ethnic group.

Discussion: Study findings demonstrate the potential differences in the impact of depression on symptom burden between NHW and H patients with CFS. With tailored interventions gaining popularity, these findings highlight a potential avenue for targeting symptom burden in specific ethnic minority groups. Further research is needed to evaluate the mechanisms behind these interactions.

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RACIAL DIFFERENCES ON MMPI-2-RF PROFILES AMONG VETERANS PARTICIPATING IN A CHRONIC PAIN REHABILITATION PROGRAM

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Chronic pain (CP) affects over 50% of U.S. Veterans, contributing to significant disability and reduced quality of life. Race related health disparities require further consideration within pain management, as pain varies by race, and racial minorities may differ in terms of their appraisal of CP. Pain appraisals are informed by psychological factors that arise from lived experiences. Understanding these underpinnings, including characterological make-up and adjustment, may serve to identify treatment targets that vary by race. The Minnesota Multiphasic Personality Inventory-2 Restructured Form (MMPI-2-RF) is an objective psychological test that assesses personality and psychopathology. On the MMPI instruments, CP is generally associated with elevations on scales measuring somatic complaints, emotional dysfunction, and interpersonal dysfunction. Racial minorities have produced mean scale score differences across several scales including those reflecting somatic concerns, suspiciousness, eccentric behaviors, excessive energy, impulsivity, cynicism, aberrant experiences, and persecutory ideation. Such differences have not been explored using the MMPI-2-RF. Given the high prevalence of CP, we attempt to address this knowledge gap in the Veteran population. We hypothesized that race would be associated with CP, such that non-whites report higher pain. Additionally, we hypothesized that there would be racial differences on the MMPI-2-RF scales and that these differences would exist after controlling for pain and relevant co-variables including gender and pain. Admission data was gathered from Veterans in a 19-day, inpatient Chronic Pain Rehabilitation Program. Of the 253 participants, 151 identified as White, 63 African American/Black, 22 Hispanic/Latino, and 17 as other. In addition to the MMPI-2-RF, the Pain Outcomes Questionnaire was administered. Race was correlated with various measures of thought dysfunction, education, marital status, insomnia, duration of pain, and pain. Regression models controlling for gender and pain found race significantly related to thought dysfunction, ideas of persecution, raw aberrant experiences, multiple specific fears, psychoticism, and disconstraint. Clinical implications, limitations, and recommendations for future research will be discussed.

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THE LIVED EXPERIENCE OF AFRICAN-AMERICAN INFORMAL CAREGIVERS OF FAMILY MEMBERS WITH ALZHEIMER'S DISEASE AND RELATED DEMENTIAS

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The purpose of this qualitative study was to describe the lived experience of African American informal caregivers of family members of Alzheimer's Disease and Related Dementias (ADRD) in a home environment. Using a qualitative, phenomenological approach, a purposive sample of 16 African American informal caregivers completed a 30 to 60-minute in-depth interview. Four themes emerged: sense of obligation, arduous journey, sentinel events, and faith in God. Findings indicated that by acknowledging and supporting the voices of caregivers of family members with ADRD, collaboration with healthcare teams could provide the informal caregiver with knowledge, social support, and the anticipatory guidance needed for coping with the unique challenges of caring for a family member with ADRD. Family assessment of the caregiving situation can lead to positive outcomes for the caregiver and care recipient.

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VALIDATION OF A COOKING HABIT SURVEY IN AFRICAN-AMERICANS USING A COGNITIVE INTERVIEW FOCUS GROUP

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Background/Purpose: Habitual cooking of healthy meals is crucial in sustaining healthy eating behaviors and preventing diet related chronic disease. African Americans reportedly cook dinner at home 4.4 times per week based on national survey data, which is lower than the overall population average of 5. Cultural or psychosocial factors may cause this disparity; however cooking survey data which would help identify barriers is limited. The purpose of this study was to utilize a cognitive interview (CI) focus group to determine content validity and cultural conversion of survey questions designed to identify motivators, barriers, and psychosocial influences on cooking habits.

Methods: Data were collected using a CI focus group with participants recruited from a faith-based community based participatory research (CBPR) study. The survey consisted of previously validated questions from other community studies. After individual survey completion, a 90-minute moderator-led focus group was conducted using group-based think aloud CI techniques. Audiotapes of the focus group were transcribed verbatim.

Results: Participants (n=11) ranged in age from 51 to 77, 30% had an annual income <\$70,000, and 54.5% were college graduates. The average frequency of cooking dinner at home was 3.3 times per week. Strategies suggested to improve the survey were 1) changing the culinary term 'knife skills' to 'chopping', as most participants did not relate to the term, 2) adding 'grandmother' and 'home economics' as sources of cooking skills development, and 3) inclusion of the term 'organic' for health food options. Participants discussed barriers to affording to eat balanced, healthy meals and how health consciousness can impact food security. Lastly, the focus group participants shared information regarding affordable healthy food sources in their community.

Conclusion: Preliminary findings from this sample suggest using CI focus group in validating surveys related to cooking habits in African-Americans. This approach allowed for development of community fostered conversations regarding cultural contributors to cooking habits. In addition, community shared resource learning can occur in the CI focus group setting which helps to promote ideas for intervention development and is the foundation of CBPR. Our survey findings were to omit culinary terms, inquire about non-parental cooking influencers, and address food security concerns in the context of health consciousness.

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DIGITAL STRATEGIES TO PROMOTE ADVOCACY FOR DISPARITIES IN MENTAL HEALTH AND CHILDHOOD OBESITY AMONG LATINO CHILDREN

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Latino children comprise nearly 1 in 4 of the U.S. youth population, yet disparities in obesity are widespread and use of mental health care services among this group remain low. According to a recent research review conducted by *Salud America!*, 22% of Latino kids face depressive symptoms--a rate higher than all other groups other than Native Americans. High rates of depression in this population may be the result of factors such as bullying, discrimination, poverty and additional community and family related stressors that can have detrimental effects on a Latino child's health. With 38% of Latino youth either overweight or obese, vs. 29% of non-Latino whites, Latino kids also face the risk of developing chronic illnesses such as type II diabetes.

While several interventions and public health campaigns continue to focus on individual behavioral change there is growing consensus about the need for public policy and campaigns aimed at reducing disparities. Emerging strategies to raise awareness of such disparities and policy solutions include the use of digital content curation, social media, petition campaigns and digital toolkits to spark action and change. In response to this growing demand, *Salud America!* developed a comprehensive, culturally and ethnically relevant digital campaign called #SaludWater. The campaign included a social media guide to share with partner organizations, an online petition aimed at getting hydration stations for schools, and an action toolkit available upon request to school advocates.

The campaign produced a total of 40,115 digital signatures in support of hydration stations, and garnered support from over 40 partners across the U.S. The hashtag #Salud Water was used 947 and produced 26,737 video views, 6.3 million social impressions and a reach of 1.4 million. Digital ads ranged from \$0.38-\$1.00 per click and on average contributed to 87.9% of reach for paid ads. *Salud America!* content curators followed up with 28 advocates who requested a personalized #SaludWater toolkit via email and continue to work with wellness coordinators to get hydration stations and update district wide policy to support hydration for Latino youth. A similar toolkit aimed at increasing access to mental health care services and promoting social and emotional learning is currently in development and a similar strategy to promote healthy minds will be used for the upcoming campaign.

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DISCLOSURE OF SEXUAL ORIENTATION TO HEALTHCARE PROVIDERS: THE IMPORTANCE OF SEXUAL AND ETHNORACIAL IDENTITIES

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Objectives. High-quality medical care for sexual minorities is contingent upon disclosure of sexual orientation to health care providers (HCP). Using an intersectionality framework, we assessed the degree to which sexual and ethnoracial identities are associated with disclosure among male sexual minorities.

Methods. Gay/bisexual men 18+ years who resided in the United States, Canada, or the United Kingdom were recruited via social media in 2015 (N=1,340). They completed a web-based survey that included the following outcome measures: (1) Ever disclosed sexual orientation to HCP (binary), (2) feel uncomfortable disclosing, (3) believe sexual orientation is not medically relevant, (4) received lower quality care because of sexual orientation (outcomes 2–4 are 5-point Likert scales). Linear (Beta coefficients [B]) and logistic regression (Odds ratios[OR]) were used to assess association by bisexual (vs. gay) and ethnoracial identities (Latino & black men). Alpha was set at p

Results. 61% of men had disclosed to a HCP. Bisexual men (vs. gay men) were less likely to disclose (OR=.36); whereas, black men more likely (OR=1.68). This association was attenuated after controlling for HIV-status. On average, men were *not* uncomfortable disclosing (M=2.9;SD=1.4); however, bisexual (B=.38) and Latino (B=.26) men were more uncomfortable. Relatedly, bisexuals (B=.41) believed more strongly that sexual orientation was *not* medically relevant as did Latino (B=.20) and black men (B=.22). Furthermore, black bisexual men believed this to a greater degree (B=.38). Sexual and ethnoracial identity was not associated with perceived lower quality care. Men who had previously disclosed were on average less likely to believe they've received poorer quality care because of their sexual orientation (B=-.39).

Conclusions. Bisexual and ethnoracial minorities may experience additional barriers to disclosure as multiple minority identities may carry added stigma around issues of sexuality.

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ETHNIC GROUP DIFFERENCES IN FRAMINGHAM RISK SCORES

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Cardiovascular diseases (CVD) are the leading causes of death in the United States. In Hawai'i, Filipinos and Native Hawaiians have the highest rates CVD related risk factors. No study to date has compared these ethnic groups CVD risk to other ethnic groups and non-Hispanic Whites. The Framingham Risk Score (FRS) is a gender-specific algorithm that predicts the 10-year CVD risk of an individual. Understanding ethnic differences in CVD risk can aid in developing targeted prevention programs. The purpose of this research is to examine differences in FRS across ethnic groups in Hawai'i, controlling for sociodemographic, biological, and psychological factors.

Kohala Multi-Ethnic Health Study included a two-hour clinical examination and interview. Clinical measurements were blood pressure, high-density lipoprotein, weight, and cholesterol. Demographic measures assessed: ethnicity, age, gender, education, marital status, and income. White, Japanese, and Filipino participants were categorized as such if they reported 100% blood quantum in their respective ethnic groups. Native Hawaiian participants were defined as those reporting any Native Hawaiian blood quantum. Center for Epidemiological Studies-Depression (CES-D) scale assessed depressive symptoms and current smoking status was assessed via self-report. FRS algorithm requires age, gender, total cholesterol, smoking status, high-density lipoprotein, systolic blood pressure, and hypertension treatment status.

Data from 1,146 individuals with no prior CVD event were analyzed. The participants had the following characteristics: 55.4% female, mean age of 48.8 yrs, 44.4% Native Hawaiian, 15.4% Filipino, 15.3% Japanese, 25% White, and 64.6% had a high school degree or less. Mean FRS scores were 12.87 for Native Hawaiian, 15.39 for Filipino, 17.01 for Japanese, and 12.94 for White. Four hierarchical regression models were run with the final model accounting for 61.7% of the variance in FRS (p)

A possible explanation for these results may be related to acculturation differences between younger and older age groups in the Japanese and Filipino populations. The older members of these two ethnic groups may have immigrated to Hawai'i for plantation work, have little formal education, and have maintained a more traditional lifestyle. Younger Filipinos and Japanese may have more formal education but have adopted a more western lifestyle (i.e., sedentary, poor diet, increased alcohol and tobacco consumption). Clinical and intervention implications of these results will be discussed.

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ETHNIC IDENTITY PREDICTS WEIGHT MISPERCEPTION FOR EMERGING ADULTS CLASSIFIED WITH OVERWEIGHT/OBESITY

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Background: While weight perception impacts engagement in health behaviors, weight misperception has been shown to be protective for individuals with overweight/obesity. Ethnic identity has also been identified as a protective factor associated with greater engagement in health promoting behaviors. Given that emerging adults have among the highest rates of overweight/obesity, the current study investigated whether ethnic identity predicts weight perception, while controlling for race, sex, and depressive symptoms.

Methods: Participants were 245 emerging adults 18-25-year-olds ($M_{age}=21.74$, $SD=2.30$; 53% White, 23% Black, 12% Hispanic, 6% Multiracial, 6% Other races; 69% female) enrolled through Amazon Mechanical Turk and a university subject pool. Body Mass Index (BMI, kg/m^2) ranged from 25.01–64.15 ($M_{BMI}=30.69$, $SD=6.15$) and was calculated using self-reported height and weight to classify individuals as overweight or obese. Respondents completed the Social Identities and Attitudes Scale (including the Ethnic Identification and Ethnic Stigma Consciousness subscales used in these analyses), Center for Epidemiologic Studies Depression Scale, and responded to the question - "How do you currently think of yourself in terms of weight?", with response options from Very Underweight to Very Overweight/Obese." Controlling for sex, race, and depressive symptoms, a multiple regression analysis was conducted to examine if ethnic identity predicted weight perception.

Results: The model was significant ($F(5, 240)=9.98$, $p<.001$, Adj. $R^2=.16$) with being female ($B=.40$, $SE=.08$, $p<.001$) and having higher depressive symptoms ($B=.01$, $SE=.003$, $p<.05$), associated with more accurate weight perception. Conversely, ethnic identification ($B=-.02$, $SE=.01$, $p<.05$) was inversely related to weight perception, such that emerging adults with stronger ethnic identification were less likely to perceive their weight accurately (i.e., they were more likely to misperceive their weight as lower than it was). Ethnic stigma consciousness and race were not significant predictors of weight perception.

Discussion: Findings suggest ethnic identity contributes to under-perceiving one's weight among emerging adults with overweight/obesity. Considering that weight misperception for individuals with overweight/obesity is protective against poor health outcomes, results highlight the potential benefits of harnessing ethnic identification in culturally-responsive health promotion interventions.

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EXPLORING THE RELATIONSHIP BETWEEN RACE-RELATED STRESS AND PSYCHOLOGICAL DISTRESS AMONG COLLEGIATE BLACK MALE ATHLETES

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Black male-student athletes constitute almost one quarter of the total National Collegiate Athletic Association (NCAA) student-athlete population. Yet, the *Mental Health Best Practices* (NCAA Mental Health Task Force, 2016) released by the NCAA Sport Science Institute in early 2016, did not emphasize cultural considerations for student-athlete mental wellness despite evidence that the psychological needs of Black male student-athletes differ from their White peers (Anshel and Sailes, 1990). Specifically, research has highlighted the significant amounts of stress that collegiate Black males experience as competitors at the college level (Melendez, 2008; Sadberry, 2013); simultaneously being valued as a representative of the university community and discriminated against as a member of a racial/ethnic minority (Engstrom & Sedlacek, 1991). Chronic exposure to discrimination based on race, racism, can result in a complex reaction conceptualized as race-related stress (Utsey, 1999). This study aims to explore the relationship between race-related stress and psychological distress among NCAA Division I, male student-athletes.

Current and former Division I Black male student-athletes were recruited nationally using snow-ball sampling. Participants completed online surveys. Those participating in the study ranged from 18 to 67 years with a mean age of 25.7 years ($SD=10.68$). Current student athletes accounted for 57.7% of the sample ($n=30$). Research participants reported seven different sports: football $n=24$ (46.2%), basketball $n=7$ (13.5%), baseball $n=2$ (3.8%), track & field $n=13$ (25%), soccer $n=3$ (5.8%), rowing $n=1$ (1.9%) and other $n=2$ (3.8%).

Preliminary results: 53 of the participants (98.1%) reported experiencing race-related stress; more than half of the participants reported experiencing high levels of race related stress.

- Almost a quarter of participants met the clinical threshold for depression (21.2%, $n=11$).
- Institutional and individual racism were positively associated with anxiety symptoms; the higher the number of instances of these specific types of racism the more symptoms of anxiety were endorsed.
- Somatization (distress caused by the perception of bodily dysfunction) was positively associated with the overall global index score on the index of race-related stress (includes all 3 subscales: individual, cultural and individual racism); the higher the number of experiences with racism the more physical symptoms were endorsed.

The preliminary results of this study suggest psychologists and other mental health professionals working with Black male student-athletes should consider how experiences of racism may influence mental health when diagnosing and treatment planning.

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LATENT CLASSES OF DEPRESSIVE SYMPTOMS IN ASIAN AMERICANS AND LIFETIME CHRONIC MEDICAL DIAGNOSES

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Background: Asian Americans (AAs) face health disparities in medical conditions such as diabetes and specific cancers. It is important to explore AAs' depressive experiences in relation to health, as research documents the association of depression and chronic illness trajectories. To capture depressive experiences broadly, this study included physical symptomatology that is historically salient in Asians' psychological distress. The primary goal was to uncover constellations of depressive symptoms in AAs and their relationship to lifetime serious disease.

Methods: Data come from the 2002–2003 National Latino and Asian American Study (NLAAS). A subsample of 309 AAs ($M_{age} = 38.71$) reporting emotional distress from feeling sad/discouraged/loss of interest, for most of the day, for several days or longer, was selected for a latent class analysis of symptoms from the Composite International Diagnostic Interview. The associations of latent symptom classes with participant-reported medical diagnoses of heart disease ($n = 19$), diabetes ($n = 26$), and cancer ($n = 3$) were examined with logistic regressions.

Results: A 4-class solution was the best fit. Two classes were primarily psychiatric: 40% characterized by non-anhedonic DSM depressive symptoms, and 23% characterized by hopelessness and anxiety with highest probability for anhedonia, low self-confidence, and psychomotor retardation. Additional classes included both psychiatric and chronic physical symptoms: 23% with highest probability for various chronic pains and functional impairment and 14% characterized by guilt, suicidality, and non-DSM somatic symptoms (e.g., neurasthenic fatigue, GI problems). Age, gender, depression severity, and age at immigration did not predict class membership. Those in the hopelessness/anxiety class were significantly more likely to have received diagnoses of heart disease ($OR = 11.63, p = .002$) and diabetes ($OR = 7.14, p = .001$) compared to the non-anhedonic symptom class. No symptom classes were related to lifetime cancer diagnosis.

Conclusions: AAs' depressive experiences vary, with greater impairment when chronic physical symptoms co-occur. Only the hopelessness/anxiety symptom class was related to lifetime heart disease and diabetes, however. Future work should explore causal directions of these associations. The null finding for cancer perhaps results from its low rate in this sample, necessitating additional research.

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OLDER LATINOS' PERCEIVED BENEFITS AND BARRIERS FOR TECHNOLOGY USAGE

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The U.S. older adult population is growing rapidly, and technology is advancing exponentially. Older generations frequently do not stay updated with the progress in technology. Older Latinos face many difficulties with handling technology due to low income and education, and language and cultural barriers. Technology components are being increasingly used in health behavior interventions and are demonstrating promising outcomes, also among older adults. Identifying barriers, specifically in the older Latino population, will help to understand the factors that prevents this ethnic group from using electronic devices. The purpose of the study was to examine the perceived benefits and barriers of technology usage among older Latinos. Six focus groups were conducted with Latinos aged 55 and older who were cell phone owners. A survey on technology usage was administered before the discussion. Focus group questions were asked about their experience with technology and interest in learning a new technology, and perceived benefits and barriers to engaging in technology. Responses were audio recorded, transcribed verbatim in Spanish and translated to English. Directed content analysis was conducted. Twenty-seven participants comprised six focus groups, M age =68.07, 49% male (N=13). Participants reported making phone calls as the primary reason for cell phone usage (96%). Most participants reported being very interested in learning how to better navigate technology, mainly cell phones; however, a few participants were not interested at all in learning about new devices. Perceived benefits for technology usage were the convenience in searching for information; information exchange, mainly with family members, and assistance for navigation. The main barriers for technology usage were the lack of proper skills to use it, the need to be taught, and vulnerability. Results suggest that most older Latinos perceive technology as a useful tool; however, the lack of experience with it, and the need to be taught restrict older Latinos' usage of technology. Technology classes to promote regular learning could provide the knowledge, practice and confidence needed to overcome the barriers faced by older Latinos.

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PERCEPTIONS OF CAREGIVING BURDEN AMONG OLDER LATINO CAREGIVERS

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A growing number of Latino caregivers are assuming the demanding role of caring for a relative with Alzheimer's disease and related dementia (ADRD). Latino caregivers spend more time caregiving than non-Latino White caregivers. As the ADRD progresses caregivers have to endure an ever-increasing burden of care and management of the care recipient. This has significant implications for caregivers' physical and mental health, and overall well-being. The purpose of this study was to describe Latino caregivers' perceptions of caregiving burden. Participants were 16 Latino caregivers (12 females and 4 males), aged 50 years and older, caring for a relative with ADRD for at least 4 hours per day at least during the past 6 months. A semi-structured interview guide was asked in English or Spanish consisting of questions about the perceptions of caregiver role and burden, social support, coping strategies, physical activity and health. For the purpose of this study responses on perceptions of burden were analyzed. Interviews were transcribed, translated, and directed content analysis was conducted. The results showed that the caregivers perceived caregiving burden as multidimensional. Eight categories of burden were identified: 1) Caregiving responsibilities, related to expected obligations as a primary caregiver on a daily basis; 2) the need to be ready to attend to the care recipient; 3) other responsibilities, in the sense that caregivers have other household, work-related or care obligations besides the caregiving role; 4) needing help and lack of support, related to the lack of extra help and the necessity of more involvement of other family members on caregiving obligations, 5) concerns about the future, with concern of their own and the care recipient's future, 6) financial difficulties, related to how the family's financial situation is affected by caregiving obligations, 7) caregiver's own health, how caregiving prevents them from engaging in appropriate disease/health management, leading to disease aggravation, and other health problems; and 8) difficulties with extreme climatic conditions, and how it affects the daily obligations, especially during the winter. It is concluded that older Latino caregivers have many sources of burden which affect their physical and mental health, and their ability to provide better care. Future studies should propose tailored interventions taking into consideration the mentioned sources of burden as external factors that can impact caregivers' health and their adherence to intervention programs.

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RACE/ETHNICITY, RESILIENCE, AND SOCIAL SUPPORT AMONG OEF/OIF COMBAT VETERANS

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Several studies have reported racial/ethnic differences in mental and physical health conditions among Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) Veterans. Examining racial/ethnic differences in protective factors against mental and physical health conditions may help improve assessment and treatment of Veterans. The present study examined the relationship between race/ethnicity and psychological resilience, and the moderating role of social support in this relationship among non-Hispanic White ($n = 605$), Hispanic ($n = 107$), African American ($n = 141$), and Asian American ($n = 97$) OEF/OIF combat Veterans. Veterans were primarily male (88%) with a mean age of 31.4 ($SD = 8.35$). Psychological resilience significantly differed as a function of race/ethnicity, with Asian American Veterans reporting lower psychological resilience compared to non-Hispanic White Veterans ($p < .001$). There were no other racial/ethnic differences in psychological resilience. Linear regression analysis showed that the relationship between race/ethnicity and psychological resilience differed as a function of social support ($b = -0.43$, $SE = 0.17$, $p < 0.01$). Specifically, increased social support was related to increased psychological resilience among non-Hispanic White ($r = .43$, $p < .001$) and African American Veterans ($r = .23$, $p = .01$), but this relationship was not observed among Hispanic ($r = -.01$, $p = .91$) or Asian American Veterans ($r = -.03$, $p = .81$). Our results are consistent with past research showing Asian American Veterans exhibit lower psychological resilience compared to non-Hispanic White Veterans. This suggests Asian American Veterans may be particularly vulnerable to the mental and physical health conditions commonly associated with the OEF/OIF conflicts. Further, cultural differences in how and why individuals use social support may underlie the finding that the relationship between psychological resilience and social support was only found in non-Hispanic White and African American Veterans. Future qualitative and quantitative research is encouraged to better understand how social support relates to psychological resilience among minority OEF/OIF combat Veterans.

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THE INFLUENCE OF SPIRITUALITY ON DEPRESSION-INDUCED NEUROINFLAMMATION IN A COMMUNITY SAMPLE OF AFRICAN AMERICANS

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African Americans (AAs) are disproportionately impacted by cerebrovascular pathology and more likely to suffer from premature cognitive decline. Depression is a risk factor for poorer cognitive functioning. Despite inconsistent rates of depression in the AAs, depressive symptoms adversely affect cognitive functioning, and research is needed to identify factors that serve to mitigate its effects on cognitive functioning. Studies have demonstrated positive influences of spirituality within the AA community. It is important to determine whether spirituality helps to attenuate the effects of depressive symptoms on cognitive functioning as well as determine the pathophysiological mechanisms that help explain these relationships. This study examines the influence of daily spiritual experiences on the relationship between depressive symptoms and cognitive functioning. Methods employed aim to examine how inflammatory markers help explain the association between depressive symptoms and cognitive functioning and whether spiritual experiences moderate this relationship. We examine if different types of spiritual experiences serve as more effective moderators than total spiritual experiences. A sample of 161 (mean age = 45.6) participants completed the Daily Spiritual Experience Scale (DSES), Beck Depression Inventory-II (BDI-II), Trail Making Test A and B (TMT) and Stroop Color and Word Test (Stroop). Blood samples were collected from these participants to measure inflammatory mediators (IL-6, IL-1a, TNF-a). Principal component analysis was used to identify various types of spiritual experiences. Linear regression analyses were also used. The results found higher BDI-II scores were associated with poorer psychomotor speed and visual scanning, as measured by TMT A ($B = 1.49$, $p = .01$). IL-6 explained a significant amount of variance in this relationship ($B = .24$, $CI\ 95\% [.00, .64]$). IL-6 significantly mediated the relationship between depressive symptoms and performance on the TMT B, a measure of psychomotor speed and mental flexibility ($B = .03$, $CI\ 95\% [.003, .095]$). The component that pertained to direct interaction with the Divine had significantly greater effects on depressive symptoms and performance on TMT A and TMT B. Frequent spiritual experiences among AAs may ameliorate the negative influence of depressive symptoms on cognitive functioning, and each kind of spiritual experience identified as unique to AAs may have its own particular kind of benefit.

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COMMUNITY SUPPORT FOR OFFERING SEXUAL HEALTH SERVICES THROUGH SCHOOL BASED HEALTH CLINICS AFTER TWO YEARS OF AWARENESS EFFORTS

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Purpose: This research assessed changes in community support for sexual health services offered through school-based health clinics (SBHCs) over a two year period in a large county in the southeast. This CDC funded partnership project set goals to: 1) implement School-Based Surveillance (Youth Risk Behavior Survey; School Health Profiles) to establish priorities and increase community awareness; 2) implement Exemplary Sexual Health Education in middle and high schools; 3) increase the number of schools that provide and link students to Sexual Health Services; 4) implement Safe and Supportive Environment initiatives supporting LGBTQ students; and 5) educate decision-makers to support policies to implement these efforts. A number of initiatives were undertaken in the interim between surveys to increase community awareness of local youth sexual risk behaviors and effectiveness of sexuality education and health services, as well as adding sexual health services to 6 SBHCs. Documentation of community opinions was sought to help inform administrators in their decisions to support policies impacting youth sexual health.

Methods: The instrument was developed after review of existing surveys on support for sexuality education and health services in the schools. An expert panel reviewed the survey for readability, content and face validity. Random-digit-dialing was used to administer the survey in year 1 (T1, N=311) and year 3 (T2, N=329). Frequencies for variables on support for sexual health services and demographics were run using SPSS. Chi-square tests were used to examine differences in support from T1 to (T2).

Results: The sample had slightly more females (T1=54%, T2=55%); was mostly white (T1&T2=60%), followed by African American (T1=30%, T2=25%); and had many with at least a college degree (T1=39%, T2=44%). Most participants were supportive of offering sexual health services at both middle schools (MS) and high schools (HS) at both T1 and T2: testing for STIs/HIV (MS: T1=61%, T2=67%; HS: T1=77%, T2=85%), treatment for STIs/HIV (MS: T1=60%, T2=67%; HS: T1=75%, T2=81%), pregnancy testing (MS: T2=58%; HS: T2=71%), and provision of condoms (MS: T1=44%, T2=52%; HS: T1=63%, T2=69%). Analyses showed a significant increase in support from T1 to T2 only for STDs/HIV testing in high school.

Conclusions: Results demonstrate strong community support for offering sexual health services through SBHCs to both middle and high school students. Although there was only a significant increase in support for one of the services, increased support for all services was documented. Discussion will focus on initiatives to increase awareness of local youth sexual risk behaviors and strategies to reduce them, as well as plans to continue to increase community support for offering sexual health services through SBHCs.

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DIFFERENTIAL SEXUAL RISK BEHAVIOR ASSOCIATED WITH MARIJUANA AND ALCOHOL AMONG HIV-POSITIVE YOUNG MEN WHO HAVE SEX WITH MEN

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Background: Substance use has been linked generally to sexual risk behavior among young men who have sex with men (YMSM), including YMSM living with HIV/AIDS (HIV+YMSM). Substance use has been conceptualized as a mechanism for increased sexual risk behavior among YMSM in a number of ways, including sensation seeking, coping with stressors, or reducing motivation for protective behavior, yet results have been mixed in assessing effects of substance use on sexual risk due to a range of measurement techniques across studies. While research has linked methamphetamine to event-level sexual risk behavior among HIV+ MSM, few studies have explored the sexual contexts of substance use among HIV+ YMSM with the two most prevalent substances used, alcohol and marijuana.

Methods: We conducted semi-structured interviews with 30 HIV+ YMSM (mean age=23.1, SD=1.1) recruited from adolescent HIV clinics and service sites in Denver and Chicago. Participants were asked open-ended questions regarding their marijuana and alcohol use, and use connected to their sexuality and sexual contexts. Interviews were audio-recorded and transcribed. A diverse team of analysts developed and iteratively refined a coding framework. Transcripts were coded using relevant categories and sub-categories until convergent coding was achieved across the data.

Results: Participants described marijuana use in sexual contexts in terms of arousal, relaxation, enhancement, and creativity, while alcohol use in sexual contexts was characterized by arousal, disinhibition, and impairment. Some participants considered marijuana use to be protective through cognitively imparting increased focus on risk, while alcohol use was described more commonly as risk producing through impairment and moderation of intention to reduce risk behavior.

Discussion: Alcohol and marijuana use were both characterized as agents of arousal in sexual contexts by the participants in this study. By contrast, intentions to reduce risk were maintained, and in some cases, enhanced by marijuana use, while intentions to reduce risk appear to be impaired by alcohol use. Event-level risk measurement is needed to advance understanding of substance use, sexual behavior and risk reduction strategies in this population.

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HOW EARLY PARENTAL SEX DISCUSSIONS MODERATE THE INFLUENCE OF INTENTIONS ON SEX INITIATION IN DIVERSE ADOLESCENTS

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Objective: Parents are an important source of sexual health information for all youth. Moreover, parent-child communication about sex is associated with youth's sexual intentions, which is an important predictor of an adolescent's sexual behaviors. Yet, associations between parental communication about sex and adolescents' intentions and sex initiation may differ across race/ethnicity. Thus, we examined associations between parental communication about sex and intentions across Black, Latino, and White adolescents. Furthermore, we examined how parental communication moderated the influence of intentions on sex initiation across racial/ethnic groups.

Methods: Using data from 4,824 (50.7% female) Black (36.4%), Latino (37.6%), and White (26%) adolescent participants from the *Healthy Passages™* study, we measured racial/ethnic differences in associations between parental communication about sex at 5th grade, intentions to have sex before the end of high school at 7th grade, and sex initiation by 10th grade.

Results: A significantly greater percentage of Latino adolescents reported never discussing sex with their parents at 5th grade (54.5%), followed by Black adolescents (27.3%), compared to White adolescents (18.2%); $\chi^2 = 27.58, p < .001$. Also, a significantly greater proportion of Latino (43.8%) and Black (34.5%) adolescents reported higher intentions to have sex before the end of high school at 7th grade in comparison to White adolescents (21.7%); $\chi^2 = 174.62, p < .001$. Moreover, higher intentions predicted a greater likelihood of sex initiation by 10th grade among all groups (Black OR = 1.29, 95% CI = [1.08, 1.53], $p < .01$; Latino OR = 1.60, 95% CI = [1.28, 1.99], $p < .001$; White OR = 2.21, 95% CI = [1.50, 3.26], $p < .001$). Yet, early parental communication about sex moderated this association only among Black (OR = 1.09, 95% CI = [1.02, 1.16], $p < .05$) adolescents.

Conclusions: The role of early parental communication about sex on subsequent intentions and sex initiation is nuanced across racial/ethnic groups. Findings of this study may provide guidance for early parent-focused intervention efforts in reducing early sex initiation.

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BODY IMAGE AND CONDOMLESS ANAL SEX AMONG YOUNG LATINO SEXUAL MINORITY MEN

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Objective: The association of body image and sexual risk behaviors among sexual minority men (SMM; e.g., gay, bisexual) has produced mixed results. However, body image is a multidimensional construct and it is possible that mixed findings were due to a lack of investigation into moderation effects. The current study aims to investigate the roles of appearance orientation (APPOR; cognitive/behavioral investment in appearance) and the potential moderating effects of appearance evaluation (APPEV; satisfaction of one's own appearance) in predicting condomless anal sex (CAS) among Latino SMM.

Methods: Participants were 151 Latino SMM recruited from the San Diego area who were HIV negative or were unaware of their HIV status ($M = 24.18$ years old, $SD = 3.19$). Participants completed a self-report questionnaire online in either English or Spanish, which included the MBSRQ-AS APPOR and APPEV subscales as well as items on sexual behaviors. A binary variable was created from a free response item in which participants reported the number of condomless anal sex partners they had over the previous 3 months, with 0 = "0 CAS partners" and 1 = "1 or more CAS partners"

Results: A binary logistic regression was conducted with APPOR, APPEV, and their interaction term entered as predictor variables, and the binary CAS variable entered as the criterion. APPOR was positively associated with CAS (Odds Ratio; $OR = 3.06$ [95% CI: 1.58, 8.17, $SE = 0.34, p < 0.01$). A significant interaction was also found ($OR = 0.17$ [95% CI: .04, .68, $SE = 0.71, p = 0.01$). To probe the significant interaction, simple slope analyses were performed at the mean \pm 1 SD values of APPEV. Results indicated that the strongest association between APPOR and CAS was found among men 1 SD below the mean on APPEV ($OR = 11.47$ [95% CI: 2.83, 46.53, $SE = 0.71, p < .001$).

Conclusions: Sexual minority Latino men who are highly invested in their appearance are at greater odds of engaging in CAS; however, this association becomes dramatically stronger in the context of men who are dissatisfied with their appearance. It is possible that these men seek out sexual partners as a means to redress concerns that they are unattractive, and forgo condom negotiating given the potential anxiety that may be associated with negative evaluations from their sexual partners. Thus, being highly invested in, and being dissatisfied with, one's appearance may be a significant risk factor for STI and HIV/AIDS risk in this population.

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MERITORIOUS AWARD WINNER

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ETHNICITY MODERATES EFFECTS OF MOTIVATIONAL INTERVIEWING TARGETING RISKY SEXUAL BEHAVIOR AMONG AT-RISK ADOLESCENT FEMALES

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Motivational Interviewing (MI) has been shown to produce more optimal client outcomes across a variety of health-related behaviors. Although some studies suggest MI is more successful with ethnic minority groups, the research remains mixed. The current study investigated the impact of ethnicity on an MI intervention aimed at reducing risky sexual behavior among adolescent females. Participants (N=272) recruited from social service agencies were randomly assigned to receive two sessions of a computer-assisted motivational intervention (CAMI) or didactic educational counseling (DEC). Baseline assessments were conducted prior to the first treatment session with follow-up assessments collected at 3-, 6-, and 9-months. Participants were 17 years old on average and 44% identified as Hispanic. Generalized estimating equations (GEE) were used to model change by intervention group over time, with ethnicity as a moderator (3-way interaction), in percent of times participants reported unprotected sex with main partners and other partners. Results indicated a significant 3-way interaction effect for percent of unprotected sex for both main partners ($\beta = -.17$, $SE = .08$, $p = .027$) and other partners ($\beta = .08$, $SE = .04$, $p = .025$). Hispanic participants showed enhanced treatment effects over time, with CAMI showing a slight advantage over DEC among Hispanic participants. An overall significant main effect of ethnicity was also found on percent of unprotected sex for main partners ($\beta = -.25$, $SE = .11$, $p = .026$) and trend toward statistical significance for other partners ($\beta = -.09$, $SE = .05$, $p = .066$). Regardless of treatment condition, Hispanic participants had less unprotected sex compared to non-Hispanic youth with other partners and main partners across the 3, 6, and 9-month follow-ups. Results suggest interventions aimed at reducing risky sexual behavior are differentially efficacious for Hispanic at-risk adolescent females, with MI producing more sustained effects. These findings have important implications for adolescent health and ethnic health disparities.

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INTERNAL PREDICTORS OF SILENCING THE SELF IN BLACK WOMEN

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Background: Silencing the self (i.e., putting the needs and wants of a romantic partner before one's own needs) has been associated with detrimental consequences, such as engagement in risky sexual behavior among Black women. However, less is known about factors that contribute to higher rates of silencing the self. In previous research, self-esteem, gender role beliefs, and gender ratio imbalance beliefs and behaviors (belief that the ratio of men to women in a particular setting is unequal and subsequent behaviors engaged in due to these beliefs) have been associated with risky sexual behavior. Thus, the current study investigated whether these variables were associated with silencing the self among Black female college students.

Methods: Participants included 99 female undergraduate students enrolled at a Mid-South University who self-identified as Black and heterosexual. Participants were 18–49 years old with a mean age of 22.93 ($SD = 6.21$). Regarding current relationship status, 36 (36.4%) were single, 33 (33.3%) were in a long-term relationship, 13 (13.1%) were married/living with a partner, 11 (11.1%) were in a short-term dating relationship with one person, 5 (5.1%) were dating a few different people, and 1 (1.0%) was separated. Participants completed demographics questions and the Silencing the Self Scale, Rosenberg Self-Esteem Scale, Gender Role Beliefs Scale, and Gender Ratio Imbalance Beliefs and Behaviors Scale (i.e., GRIBBS). A multiple linear regression was conducted to predict silencing the self from self-esteem, gender role beliefs, and gender ratio imbalance beliefs and behaviors.

Results: The overall regression model was significant ($F(3,95) = 17.97$, $p < .001$, $Adj. R^2 = .34$) with higher self-esteem ($B = -1.05$, $SE = .29$, $p < .001$) and GRIBBS ($B = .57$, $SE = .16$, $p = .001$) associated with greater self-silencing. Gender role beliefs was not a significant predictor of silencing the self in this sample.

Discussion: Findings suggest that Black women who believe there is an imbalance of available men to women in their environment and women who have lower self-esteem are more likely to silence themselves in relationships. Given known associations between silencing the self and risky sexual behaviors, these findings suggest a novel avenue for tailored interventions for Black women. Future longitudinal studies should explore various mechanisms by which self-silencing may lead to increased risk behavior among Black college women.

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LONELINESS MEDIATES THE RELATIONSHIP BETWEEN PAIN DURING INTERCOURSE AND DEPRESSIVE SYMPTOMS AMONG YOUNG WOMEN

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Dyspareunia, or pain during intercourse, affects 12 to 44% of women. Previous research suggests that women who experience pain during intercourse also experience higher rates of depressive symptoms, and that loneliness is one factor that might contribute to this relationship. We hypothesized that women who experience more severe and interfering pain during intercourse would report higher rates of loneliness and higher rates of depressive symptoms. Further, we hypothesized that loneliness would mediate the relationship between pain during intercourse and depressive symptoms. 104 female participants (85.6% white, 74.03% partnered, 20.9 [3.01] years old) completed an online survey including a demographic questionnaire, the 10-item PROMIS Vaginal Discomfort Measure, the 6-item PROMIS Depression Measure, and the 20-item Revised UCLA Loneliness Scale. Pearson correlations and a bootstrapped mediation analysis were conducted to elucidate the relationships among pain during intercourse, loneliness, and depressive symptoms. Pain during intercourse, loneliness, and depressive symptoms were all significantly correlated ($p < 0.5$). Results of the mediation analysis indicated that loneliness was a significant mediator of the relationship between pain during intercourse and depressive symptoms (indirect effect = 0.077; 95% CI = 0.05 to 0.19). After accounting for loneliness, pain during intercourse was not significantly related to depressive symptoms, suggesting that loneliness fully mediated the relationship between pain during intercourse and depressive symptoms. These findings are consistent with previous studies highlighting that pain during intercourse is related to depressive symptoms. The current study adds to that literature and suggests that more frequent and severe pain during intercourse leads to more loneliness, which then leads to increased depressive symptoms. Prior studies have found that women frequently conceal their pain from partners, friends, and physicians, which might be one explanation for the current results. This line of work has important implications for clinicians, as loneliness might be an important target for treatment in women who experience pain during intercourse and depressive symptoms.

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MOTIVATIONAL INTERVIEWING TO REDUCE RISKY SEXUAL BEHAVIORS AMONG AT-RISK FEMALE ADOLESCENTS: A RANDOMIZED CONTROLLED TRIAL

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Background: At-risk female adolescents are disproportionately impacted by sexually transmitted infections and unplanned pregnancies. Therefore, effective interventions targeting risky sexual behaviors associated with these adverse health outcomes are essential. The current study examined the effectiveness of a computer-assisted motivational intervention (CAMI) on reducing risky sexual behaviors in at-risk female adolescents.

Methods: Participants (N=272) were recruited from social service agencies and randomly assigned to receive two sessions of CAMI or didactic educational counseling (DEC). On average, participants were 16.9 years old (SD = 1.7), 34.9% identified as White, 33.8% as Multiracial, 21.3% as Black, and 9.9% as other. Assessments were collected at baseline, 3, 6, and 9 months to assess sexual partners, condom use, and substance use during sex. Generalized estimating equations (GEE) modeled change by group over time for sex without a condom while using substances.

Results: A significant treatment by time effect was found for all partners (OR = .51, $p = .017$) and main partners (OR = .55, $p = .048$) for sex without a condom while using substances. Compared to DEC, participants who received CAMI were less likely to report sex without a condom while using substances with all partners and main partners, and this effect held across 3, 6 and 9 month follow-ups. Further, participants who received DEC reported an increase in sex without a condom while using substances with all partners and main partners at 6 and 9 month follow-ups. No significant effects were found for sex without a condom while using substances with other partners.

Conclusions: Our results indicate that CAMI reduces risky sexual behaviors in at-risk female adolescents. Given that consistent condom use is critical to the health of sexually active adolescents, CAMI could play an important role in risk reduction.

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OUT OF SYNC: SOCIAL JETLAG AND SEXUAL HEALTH BEHAVIORS AMONG GAY AND BISEXUAL MEN

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Background: Social jetlag refers to the mismatch between one's chronotype (being an "early bird" vs. a "night owl") and the timing of activities—and typically, evening types experience worse outcomes, particularly in outcomes that require "being at one's peak" during the daytime (e.g., school, work, fitness). However, research has not yet considered whether sex is an activity that commonly occurs at night, and whether morning types may thus experience the difficulties with self-regulation at night that evening types often experience during the day. We explored mental and sexual health among 1113 gay and bisexual men (GBM) and the mismatch between chronotype and times of day or night when sex with casual partners occurs.

Method: We surveyed 1113 HIV-negative GBM in a national cohort study on depression, social anxiety, emotion dysregulation, sexual compulsivity, sexual transmission risk, time of most recent anal sex (with and without condoms) with a casual partner, and their usual time of feeling tired.

Results: The sample had a mean age of 42, although later chronotype was associated with younger age. Adjusting for age, having an evening chronotype was associated with greater depression (Wald $\chi^2(2)=38.9$, $p<.001$, social anxiety (Wald $\chi^2(2)=15.9$, $p<.001$), and emotion dysregulation (Wald $\chi^2(2)=24.7$, $p<.001$)—but no differences emerged on sexual compulsivity nor on odds of recent HIV risk, suggesting that evening types were not experiencing greater distress regarding sex than morning types. Of the 344 men with recent events, 49.4% reported that last sex without condoms occurred after 9pm. While evening types were more likely to report later times of sex, many morning types also reported times later than 9pm (37%). Sex without condoms tended to occur later than sex with condoms, especially among the younger men (18–29), as 52.1% reported that their last condomless sex occurred later than their usual time of feeling tired (vs. 36.5% for sex with condoms).

Conclusions: It is proposed that these findings of no chronotype differences on sexual distress or risk-taking—even though differences were observed in depression and other mental health outcomes—may be partly explained by our finding that sex was, for most participants, a night-time activity (when morning types are expected to be experiencing circadian misalignment). The finding that GBM commonly reported late-night times for sex—especially sex without condoms, among the younger men—is relevant for the consideration of social jetlag, as these men are commonly making sexual health decisions late at night. These findings have implication for HIV/STI prevention and health behavior change, as well chronobiology and sleep research.

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PSYCHOSOCIAL FACTORS, PHYSICAL ACTIVITY, AND RISKY SEXUAL BEHAVIOR AMONG MSM AND TRANSGENDER WOMEN IN THE US: A CLUSTER ANALYSIS

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Background: With persistently high rates of new HIV infection among men who have sex with men (MSM) and transgender women, it is important to identify certain subgroups at higher risk for contracting HIV within this population. Poor psychosocial health (e.g., psychological distress, poor body image, high impulsivity) is known to be associated with an increased likelihood of risky sexual behavior, such as condomless receptive anal intercourse (RAI) and use of drugs/alcohol with sex. In contrast, regular physical activity (PA) is known to have positive effects on these psychosocial factors, yet the role it may play among these different factors with respect to risky sexual behavior remains unclear.

Purpose: To identify expected at-risk clusters (i.e., based on psychological distress, body image, impulsivity) while also including leisure-time PA, and explore whether or not the identified clusters differ in risky sexual behavior.

Methods: Baseline data from a longitudinal internet survey with non-PrEP-using MSM and transgender women from all major US regions were used. A total of 263 MSM including 14 transgender women completed the Godin Leisure Time Exercise Questionnaire (GLTEQ), Kessler Psychological Distress Scale (K10), Body Area Satisfaction Scale (BASS), Barratt Impulsiveness Scale (BIS-15), and questionnaires assessing drugs/alcohol use with sex, and frequency of condom use with RAI in the past month. Participants were ages 18–70 ($M_{age}=39.9 \pm 14.2$), mostly White (66.9%), and self-identified as gay (53.6%). Cluster analysis was conducted using Euclidean distance and K means. Clusters were then compared using Chi square tests and ANOVAs.

Results: Cluster analysis produced two distinct clusters: A ($N=135$; $M_{K10}=17.2 \pm 5.8$, $M_{BIS-15}=26.6 \pm 5.3$, $M_{BASS}=3.5 \pm 7$, $Median_{GLTEQ}=42$), and B ($N=128$; $M_{K10}=29.3 \pm 7.9$, $M_{BIS-15}=35.1 \pm 6.9$, $M_{BASS}=2.8 \pm 7$, $Median_{GLTEQ}=25$). Cluster B had more transgender women ($X^2=5.2$, $p=.02$), was more likely to engage in condomless RAI ($X^2=12.4$, $p<.001$), and more likely to use drugs/alcohol with sex ($X^2=9.4$, $p=.002$) in the past month. Clusters were not significantly different with respect to age, sexual orientation, and racial group.

Conclusions: These results indicate that within a national sample of non-PrEP-using MSM and transgender women, those with poor psychosocial health, high impulsivity, and lower levels of leisure-time PA engage more in risky sexual behavior and therefore are at greater risk for HIV infection. Future longitudinal research is needed to explore the relationship between levels of PA, psychosocial health, and risky sexual behavior.

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SEXUAL HEALTH CARE EXPERIENCES AND NEEDS AMONG A NATIONAL SAMPLE OF TRANSGENDER MEN AND NON-BINARY INDIVIDUALS

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Background: Transmasculine (TM)-individuals have received scant attention in research and often don't receive adequate sexual health care. This may be due, in part, to biased assumptions about sexual behavior among TM, including that they are not at risk for HIV. This NIH funded national study of TM sexual health needs and preferences (led by a majority trans-identified research team) was designed to address this gap and improve sexual health care provided to TM.

Methods: From May – July 2017, 1,852 TM-individuals representing all 50 states, participated in a 45-minute online survey. Two-thirds of participants (67%) were under 30, 30% were TM of color, and 43% made under \$25k/year. Participants answered a series of questions about their sexual activity/behavior, sexual health care experiences and needs, and preferred language for provider conversations regarding their overall sexual health.

Results: Over 74% had engaged in sexual activity within the past 6 months (46% with ciswomen; 37% with cismen; 21% with transmen; 12% with transwomen). Among sexually active participants, 33% (n = 449) reported frontal receptive sex and 15% (n = 203) reported anal receptive sex with a partner with a penis. However, only 25% reported having a sexual history taken within the past 6 months; and 51% do not feel comfortable talking with a provider about their sexual health. As an opener to sexual health conversations, 66% stated it is very important for a provider ask if they are comfortable discussing their sexual health. In contrast to current wisdom about sexual history taking, the majority of participants said they want providers to use medical/anatomical terms. However, 63% of participants stated that a provider had *never* asked for preferred words to describe their body/genitalia. Lastly, participants prefer providers to ask gender neutral questions when taking a sexual history, e.g., 53% preferred "Are you sexually active?" (less than 2% preferred the commonly used question: "Do you have sex with men, women or both?").

Conclusion: Providers are not adequately assessing sexual health for TM, thus potentially missing opportunities to provide important sexual health, HIV/STI prevention information, and access to PrEP and PEP. Gender-affirming sexual health care must include a comprehensive patient-centered model that engages TM in conversation about their body and sexual health. More research is needed to develop of gender affirming sexual history tool for TM.

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SEXUAL ORIENTATION COMPARISONS OF CONDOMLESS SEX INTENTION AMONG COLLEGE MALES IN TAIWAN USING THE THEORY OF PLANNED BEHAVIOR

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Background: Prior studies have found that heterosexual and non-heterosexual males had different patterns of sexual behavior, and non-heterosexual males were at higher risk for HIV infection through sexual risk behavior. However, given the aforementioned differences, little is known about whether and how heterosexual and non-heterosexual male college students differ in their condomless sex intention (CSI) and associated factors. Hence, using the Theory of Planned Behavior (TPB), this study aimed to compare the theory-based factors influencing CSI among heterosexual versus non-heterosexual male college students in Taiwan.

Methods: Anonymous survey responses from 1,640 male college students in Taiwan were included in the multivariate logistic regression analyses, stratified by sexual orientation, to explore the TPB-based factors linked to higher CSI (rated on a 7-point scale and dichotomized by the median). Items derived from the TPB constructs—Attitude Toward the Behavior (ATB), Subjective Norm (SN), and Perceived Behavioral Control (PBC)—were factor-analyzed to form 5 factor-based subscales, whose scores were trichotomized.

Results: Heterosexual and non-heterosexual males perceiving neutral (AOR=2.11 and 6.04) and positive (AOR=4.03 and 6.55) ATB about positive outcomes were more likely to have higher CSI, respectively. Regarding ATB about negative outcomes, only heterosexual males with neutral (AOR=1.85) and positive (AOR=3.18) ATB tended to have higher CSI. Heterosexual and non-heterosexual males perceiving neutral (AOR=1.34 and 5.73) and supportive (AOR=2.70 and 10.51) SN were more likely to have higher CSI, respectively. Under facilitating and constraining conditions, heterosexual males reported higher CSI when perceiving intermediate (AOR=1.42 and 1.92) and high (AOR=1.40 and 2.54) PBC, respectively. Specifically, regarding ATB, heterosexual males cared about sexual excitement, unexpected pregnancy, etc. vis-à-vis non-heterosexual males about psychological pleasure and sexually transmitted infections. As for SN, the support for CSI from lovers was important, especially for non-heterosexual males. About PBC, embarrassment when buying condoms was linked to CSI for all.

Conclusions: All 5 TPB factors were linked to CSI in heterosexual males, compared with ATB about positive outcomes and SN in non-heterosexual males. The specific aspects related to CSI differed between heterosexual and non-heterosexual males and can inform tailored health education programs.

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SEXUAL RISK TAKING BEHAVIOR IN YOUNG ADULTS: POOR EXECUTIVE FUNCTION AND EFFORTFUL CONTROL COULD PUT MALES AT RISK

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Introduction. Research points towards temperament, particularly extraversion, as an important factor in predicting risk-taking behavior among adolescents. The associations between extraversion and risk-taking broadly, and sexual risk taking specifically, have not been studied as extensively among young adults. Given the negative health consequences associated with sexual risk-taking, understanding individual differences that contribute to risky behavior could assist in the development of prevention and intervention programs. In addition to extraversion, temperamental effortful control (EC), the ability to inhibit behavior when confronted with something desirable, and executive function (EF; working memory, planning) likely contribute to whether one engages in sexual risk-taking behavior. This study examined whether EF moderated the relation between temperament (extraversion, EC) and sexual risk-taking behavior such that better EF would play a protective role against risky sexual behavior.

Method. The participants were 210 undergraduates at a medium-sized university, [$M(\text{age})=19.11$, $N(\text{males})=130$]. The majority of participants were White (53.3%). Participants completed the following self-report measures: a demographic survey, the Behavior Rating Inventory of Executive Function Adult Self-Report (BRIEF-A), which measures executive dysfunction, the Adult Temperament Questionnaire (ATQ), and the Sexual Risk Survey (SRS).

Results. Males indicated greater EC than females ($M=4.27$, $SD=.74$; $M=4.05$, $SD=.58$; $t(207)=2.34$, $p<.05$). For males and females, higher scores of EF dysfunction were associated with lower EC, $r(130)=-.49$, $p<.001$; $r(79)=-.45$, $p<.001$, respectively. Additionally, for males and not females, lower EC was associated with greater sexual risk taking, $r(130)=-.17$, $p<.05$. Extraversion was not related to any of the other study measures. EF was not associated with sexual risk taking. EF dysfunction moderated the relation between EC and sexual risk taking for males only ($R^2=.07$, $F(3,126)=3.44$, $p<.05$, $b=2.94$, $t=2.27$, $p=.02$) such that individuals with high EC and poor EF were engaging in high levels of sexual risk-taking behavior and individuals with high EC and better EF showed lower risk.

Discussion. Sexual risk-taking is of particular concern in young adults. Because executive function skills are still developing during this time, these skills, along with temperamental EC, likely play a key role in young adults' engaging in sexual risk-taking behavior. The study's findings point towards EC as a significant predictor of sexual risk-taking behavior in males such that individuals with greater EC are less likely to take risks, but that this relationship is impacted by one's level of EF. Unexpectedly, these relations were only found for males. Future research should explore the factors that predict female sexual risk taking.

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SEXUAL SHAME: A POSSIBLE MEDIATOR BETWEEN INTERNALIZED HOMOPHOBIA AND SEXUAL COMPULSIVITY IN GAY AND BISEXUAL MEN

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Background: Internalized homophobia has been negatively associated with mental health and psychological wellbeing among gay and bisexual men. Previous research has also found that internalized homophobia is a possible contributor to sexual compulsivity. However, there is little research exploring the possible mechanisms that underlie this relation, thus the possibility of additional variables being involved must be considered. Sexual shame has been previously found to be detrimental to the mental health of sexual minorities, which in turn may lead to poor decision making, risky sexual behavior and adverse physical health outcomes. Limited studies have examined the role of sexual shame and its relation to sexual compulsivity, particularly within gay and bisexual men.

Methods: A national sample of 949 HIV-negative gay and bisexual men aged 18–67 ($M=35.8$) completed at-home surveys, including measures of sociodemographic characteristics, the Internalized Homophobia Scale, the Sexual Shame Scale, and the Sexual Compulsivity Scale.

Results: Adjusting for sociodemographic characteristics, regression analyses indicated significant direct effects for internalized homophobia on sexual shame ($\beta=0.23$, $p<.001$) and sexual compulsivity ($\beta=0.23$, $p<.001$). Modeled simultaneously, the association between sexual shame and sexual compulsivity was significant ($\beta=.37$, $p<.001$) and the association between internalized homophobia and sexual compulsivity weakened ($\beta=-.06$, $p=.050$). Sobel's test indicated the presence of a significant indirect effect of internalized homophobia on sexual compulsivity through sexual shame ($p<.001$).

Conclusions: Findings suggest that internalized homophobia is associated with both sexual compulsivity and sexual shame. Furthermore, the relationship between internalized homophobia and sexual compulsivity was almost completely explained through sexual shame. Addressing these issues at individual and community levels is crucial to reduce the negative effects on the mental and physical health of gay and bisexual men. Efforts should be made to create culturally responsive interventions aiming to reduce sexual compulsivity, especially taking into account the potential effects of internalized homophobia and the role sexual shame has in the relationship between these two.

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SHORTER INTERVAL BETWEEN MENARCHE AND FIRST SEXUAL INTERCOURSE ASSOCIATED WITH INCREASED SEXUAL RISK AMONG YOUNG WOMEN

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RATIONALE: Evidence suggests that age of menarche and age of first sexual intercourse are independently linked to sexual health behaviors, including number and type of sexual partners and incidence of unprotected sex and sexually transmitted infections. Emerging research demonstrates that short intervals between age of menarche and first sexual intercourse are similarly associated with increased risk of cervical disease. Less is known about the relationship between this interval and other sexual health behaviors.

METHODS: Data were collected from a diverse group of pregnant adolescents and young women (14–21 years, N=831) from fourteen community health centers and hospital obstetric outpatient settings in New York City. Logistic and linear regression models adjusted for known predictors of sexual risk and sociodemographic variables were used to test associations between the interval length (in years) between age of menarche and first sexual intercourse and sexual risk behaviors (e.g., number of sexual partners, contraceptive use, exposure to high-risk sexual partners, diagnosis of sexually transmitted infections, engagement in intimate partner violence).

RESULTS: Mean age of menarche was 12.21 ± 1.64 , age of sexual debut 15.23 ± 1.66 and interval 3.02 ± 2.01 years. Short intervals between age of menarche and first intercourse were significantly associated with decreased contraceptive use in the six months prior to pregnancy (OR: 2.126, 95% CI: 1.249, 3.619, $p=.005$) and increased incidence of intimate partner violence (OR: 1.695, 95% CI: 1.014, 2.834, $p=.044$).

IMPLICATIONS: The interval length between menarche and first intercourse is an important marker of risk; shorter windows are associated with lower likelihood of contraceptive use and increased incidence of intimate partner violence. Menarche presents an early window of opportunity to educate young women about sexual and reproductive health. Clinicians and comprehensive sexual and reproductive health education programming should work to identify girls at the age of their first period and subsequently engage them in conversations about their reproductive capacity, contraceptive choice, and dynamics of healthy intimate relationships.

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DYNAMIC FEATURES OF PROBLEMATIC DRINKING BEHAVIOR ACROSS AGE

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Prevalence rates of alcohol use disorder (AUD) peak during young adulthood. There are multiple, diverse criteria that constitute AUD, ranging from drinking longer than intended to continuing to drink despite problems with family. Beyond examining overall prevalence rates of AUD, less is known about the typology of problem drinkers. There may be different profiles of individuals with an AUD based on reported symptoms. Sub-groups also may vary in prevalence by age. Identifying sub-populations of problematic drinkers based on their AUD symptomatology and examining their prevalence across age could highlight aspects of risky drinking that are particularly salient at different ages. We sought to (1) determine the extent to which each symptom of AUD varied by age, (2) identify sub-groups of drinkers with AUD, and (3) examine prevalence rates of sub-groups by age. The current study used data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC-III). Current drinkers aged 18–64 who met criteria for a past-year AUD were included ($n = 5,402$). Latent class analysis (LCA) based on 11 AUD criteria revealed 5 classes: Drinkers with Alcohol-Induced Injury (25%), Drinkers with Low Life-Interference (21%), Drinkers Experiencing Adverse Effects (34%), Drinkers with Difficulty Cutting Back (13%), and Highly Problematic Drinkers (7%). Class prevalences were allowed to vary flexibly across age using time-varying effect modeling (TVEM). Drinkers with Alcohol-Induced Injury experienced a linear increase across age. Drinkers with Low Life-Interference were most prevalent in early adulthood, declined with age, and increased around age 52. Drinkers Experiencing Adverse Effects were most prevalent early in adulthood, declining with age. Drinkers with Difficulty Cutting Back remained stable across age, with an increase at age 53 and peak at age 62. Highly Problematic Drinkers remained stable across age, peaking at age 49. The integration of LCA and TVEM provided a novel perspective of sub-groups of problematic drinkers and their variation in risky drinking patterns by age. AUD defined by adverse effects from drinking (e.g., nausea, hallucinating) or highly problematic but low perceptions of interference with life is particularly salient at younger ages; AUD symptoms of difficulty cutting back and experiencing injury are more relevant at later ages. Findings highlight ages and salient symptoms for which prevention and intervention efforts are most needed.

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LATENT CLASSES OF DISCRIMINATION AMONG SEXUAL MINORITY ADULTS: ASSOCIATIONS WITH SUBSTANCE USE DISORDERS

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Sexual minorities (SMs) are disproportionately vulnerable to a variety of health outcomes, including substance use (e.g., alcohol, marijuana, and nicotine). The National Institute on Minority Health and Health Disparities recently recognized SMs as a health disparity population, citing discrimination as a key barrier to health equity. Though an emerging body of research demonstrates the effects of discrimination on SM health, there are different types of discrimination experiences, and it is less clear how types or patterns of discrimination may contribute to health disparities.

Using a national sample of SM adults (aged 18–65) from the National Epidemiological Survey of Alcohol and Related Conditions III, we used latent class analysis (LCA) to examine patterns of past-year sexual-orientation-specific discrimination among SM adults and how those patterns are related to substance use. We then examined the association between latent class membership and past year substance use disorders by biological sex, controlling for age.

We identified four latent classes of discrimination: No-Discrimination (87%), Overt Discrimination-Only (7%), All-Types-of-Discrimination (4%), and Healthcare-Discrimination-Only (2%). Among SM males, membership in the All-Types-of-Discrimination class was significantly associated with past-year alcohol use disorder (pyAUD) compared to the No-Discrimination class (odds ratio (OR): 1.89, 95% confidence interval (CI): 1.08, 3.30). Among SM males, membership in the Overt-Discrimination-Only class was associated with pyAUD (OR: 2.70, 95% CI: 1.72, 4.24) and past year drug use disorder (pyDUD) (OR: 1.84, 95% CI: 1.02, 3.30) relative to the No-Discrimination class. Among SM males, there were no significant associations between latent classes and past-year nicotine dependence or past-year marijuana use disorder. Among SM females, the Overt-Discrimination-Only class was significantly associated with pyAUD (OR: 2.00, 95% CI: 1.26, 3.18) relative to the No-Discrimination class. Among SM females, there were no additional statistically significant relationships between latent classes and past-year substance use disorders.

SM adults report varying patterns of discrimination experiences, and their association with substance use disorders vary. These results have the potential to identify critical subgroups of SMs for targeted intervention and prevention programs.

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CULTURAL CONSTRUCTS ASSOCIATED WITH SMOKING AND DRINKING IN HISPANIC COLLEGE STUDENTS

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While drinking and smoking rates within college student samples are notably high, few studies have assessed these addictive behaviors in Hispanic college students. Even fewer have assessed smoking and drinking relative to cultural constructs. The aims of this study were to assess current smoking and weekend drinking, as well as potential cultural construct correlates of use behaviors in a Hispanic college student sample. College students ($N=345$; 72.2% female; Age $M=20.13$, $SD=3.922$) completed an online consent process and battery of surveys which included measures of: smoking status, average number of drinks per weekend, familism, acculturation, Latino/a values, fatalism, and perceived microaggressions. Logistic (current smoking) and linear regression (average weekend drinks) analyses assessed the associations between use and cultural constructs. Any current smoking (39.1%) was statistically significantly associated with (Cox and Snell $R^2=.106$): male gender (OR=1.8), acculturation (OR=.559), and the media microaggression subscale of the Revised Racial and Ethnic Microaggression Scale (OR=.71). Average number of weekend drinks ($M=2.3$, $SD=6.8$) was statistically significantly associated with increased assumptions of inferiority perceived microaggressions (Adjusted $R^2=.076$; $p<.05$). The inverse association between smoking and acculturation is inconsistent with convergence and acculturative stress theories of addictive behaviors, however is consistent with past empirical findings on the border (e.g., Cooper et al., 2011). That smoking was associated with decreased exposure to positive media images of people of color and that weekend drinking was associated with increased perceived assumptions of inferiority by others provides burgeoning evidence that smoking and drinking may be associated with perceived microaggressions. However, cultural constructs accounted for limited variance in both smoking and drinking, suggesting that other psychosocial constructs may be more strongly associated with Hispanic smoking and drinking. Thus, future studies of licit substance use in Hispanic college students may wish to be prospective in nature, utilize more nuanced assessments of substance use behaviors, and include a broader range of psychosocial constructs.

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INTEGRATED PSYCHOTHERAPY FOR CO-OCCURRING SUBSTANCE USE AND PSYCHOLOGICAL DISORDERS: A SYSTEMATIC REVIEW OF OUTCOMES

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Opioid use is an epidemic, and co-occurring psychiatric disorders (COD) are prevalent among individuals with Opioid Use Disorder (OUD). COD are associated with worse treatment outcomes among individuals with OUD and treatment approaches that do not address the relationship between substance use and psychological distress lack empirical support. This systematic review examined the efficacy of integrated psychotherapy, defined as a stand-alone intervention to concurrently treat a Substance Use Disorder (SUD) and COD by addressing the reciprocation between symptomologies. Studies were retrieved from electronic databases (Google Scholar, Academic Search Complete, PsycINFO, MEDLINE, ERIC, Health Source: Nursing/Academic Edition, Psychology and Behavioral Sciences Collection) and existing reviews and meta-analyses, and were included if at least one participant had a documented OUD diagnosis or reported opioids as his/her primary substance. Across studies, integrated psychotherapies were generally effective in reducing self-reported SUD and COD severity. Regarding COD outcomes, integrated psychotherapy for SUD & PTSD was superior to SUD-only treatment controls; however, findings for integrated psychotherapy for SUD & other COD were inconclusive. Evidence of the superiority of integrated psychotherapy compared to SUD-only treatment on SUD outcomes is lacking. However, there were promising implications for individuals with OUD indicating that integrated psychotherapy combined with medication assisted treatment (MAT) may be more effective than SUD-only treatment combined with MAT in reducing opioid use across follow-up. Limitations of current research and gaps in the literature are discussed, and future directions are suggested.

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MENTAL CONTRASTING WITH IMPLEMENTATION INTENTIONS (MCII): AN ONLINE SELF-REGULATION INTERVENTION TO REDUCE DRINKING

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Background: Drinking has detrimental health consequences, which cost the United States billions of dollars each year. Effective interventions to reduce hazardous drinking are needed. Online interventions could save costs while increasing dissemination. Although they have promise as alternative treatments, the evidence for the effects of online interventions is still mixed, and the most efficient framework for delivering online alcohol reduction intervention remains unknown. For other health behaviors, the self-regulation intervention of mental contrasting with implementation intentions (MCII) has been successful. We explored whether MCII qualifies as a new online intervention framework to help people who were worried about their drinking to reduce it.

Method: Participants ($N = 200$, female = 107) were recruited online. They either learned MCII or solved simple math problems (control). During mental contrasting, people juxtapose their mental images about a desired and feasible future (e.g., drink less alcohol) with an inner obstacle (e.g., feeling pressured by friends). This helps people understand how to overcome their obstacle (e.g., saying no when pressured to drink). Implementation intentions complement mental contrasting. Implementation intentions frame the obstacle as an if/then statement “If situation x arises, then I will show goal-directed behavior y .” Implementation intentions increase the accessibility of the situational cue specified in the “if”-part and foster an automatic goal-directed response specified in the “then”-part, once this critical cue is encountered.

Results: Immediately after the intervention, participants in the MCII condition (vs. control) reported increased commitment to reduce drinking. After one month, they reported having taken action measured by the Readiness to Change drinking scale (RTC). Importantly, when drinking was hazardous (AUDIT ≥ 8 , $n = 85$), participants in the MCII condition indicated a decreased number of drinking days ($OR = .47$) and drinks per week ($OR = .57$) compared to the control condition.

Conclusion: These first findings indicate that a brief, self-administered online MCII intervention ($Mdn = 28$ minutes) might reduce drinking in people who worry about their drinking, especially for people at-risk for hazardous drinking. MCII is scalable, and future studies should test the cost-effectiveness of the intervention in real-world settings.

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MORE INVESTMENT IN EXPLICIT DRINKING IDENTITIES IS ASSOCIATED WITH MORE ALCOHOL CONSUMPTION AND HAZARDOUS DRINKING

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Research has demonstrated that alcohol consumption and its negative outcomes are elevated among those who identify with drinking. We extended prior research on drinking identity by considering multiple dimensions of investment in it, including perceptions of how important it is and how frequently one thinks of being a drinker/drinking. We also investigated these dimensions of investment in absolute terms as well as in terms relative to other life domains (education, well-being, personal relationships). Our central aim was to evaluate whether these dimensions of investment were positively associated with alcohol consumption and hazardous drinking (i.e., greater risk of alcohol use disorders) either in interaction with or in addition to identification with drinking. The aim was evaluated with a sample of college student hazardous drinkers. College students who were screened for hazardous drinking ($N = 521$; AUDIT ≥ 8 ; age $M = 21.46$, 57.4% female, 58.2% White) completed self-report measures of alcohol consumption (# drinks/week), hazardous drinking (AUDIT: alcohol use disorder identification test), identification with drinking (ASCS: alcohol self-concept scale), and investment in drinking identity (absolute and relative drinking identity importance as well as absolute and relative frequency of thought about being a drinker/drinking) at a single time point. Controlling for gender, and in addition to a main effect of identification with drinking, we observed main effects of thought frequency. Specifically, alcohol consumption and hazardous drinking were both independently and positively associated with identification with drinking ($b = .25$, $z = 3.28$, $p = .001$; $b = .18$, $z = 2.23$, $p = .026$), absolute frequency of thought about being a drinker ($b = .10$, $z = 4.51$, $p < .001$; $b = .10$, $z = 4.94$, $p < .001$), and relative frequency of thought about drinking ($b = .13$, $z = 4.11$, $p < .001$; $b = .11$, $z = 3.84$, $p < .001$). There were neither effects of drinking identity importance, perhaps because they were accounted for by thought frequency effects, nor interaction effects between identification with drinking and drinking identity investment. In sum, drinking identity investment is associated with alcohol consumption and hazardous drinking beyond identification with drinking. Absolute and relative frequency of thought about being a drinker/drinking may be an additional risk factor and/or clinical target for alcohol consumption and hazardous drinking.

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PERCEPTION OF HARM RELATED TO OPIOIDS IS ASSOCIATED WITH SUBSTANCE USE FREQUENCY IN COLLEGE UNDERGRADUATES

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Previous research has shown that perceptions of harm related to substances are associated with less frequent use. For example, more harmful perceptions of cocaine, marijuana, and alcohol have been associated with less use of multiple substances. Recent health campaigns have utilized this research to increase the perception of harm of opioid use, however few studies have examined the relationship between perceptions of harm of opioid use and substance use frequency. Therefore, the present study sought to understand the association between the perception of harm related to opioids and substance use frequency among college undergraduates. Participants ($N=981$; Mean age = 20.52 ± 4.68) were mostly Hispanic (47%) or White (37%), and female (72%). Each completed on-line assessments regarding frequency of recreational drug use in the past 30 days (i.e., alcohol, marijuana, opioids, sedatives, stimulants, and psychedelics) and an assessment of perceived harm of opioids in comparison to other substances. Participants were categorized into one of three groups, those who endorsed that opioids were: more harmful than illicit drugs ($N=215$), equally as harmful ($N=568$), and less harmful ($N=198$). Cross-sectional negative binomial regression analyses that controlled for age revealed that those who perceived opioids to be less harmful than illicit drugs reported the lowest number of days using marijuana, opioids, sedatives, stimulants, and psychedelics. In addition, those who perceived opioids to be more harmful reported the highest number of days using marijuana, sedatives, and psychedelics. The more harmful and equally harmful groups were similar in stimulant and opioid use, but reported significantly higher use than the less harmful group. Lastly, the less harmful and more harmful group reported similar alcohol use, which was significantly less than the equally harmful group, and there were no significant differences in binge drinking among the three groups ($IRR = .01 - .91, p < .05$). These findings suggest that harmful perceptions of opioids may not be strongly associated with decreased substance use within the past 30 days, but rather may be associated with more frequent use. Moreover, health campaigns aimed at increasing perceptions of harm of opioids to reduce substance use frequency among college students may not be strongly supported.

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PSYCHIATRIC COMORBIDITIES AND TREATMENT ADHERENCE IN WOMEN RECEIVING PRENATAL MEDICATION ASSISTED TREATMENT FOR OPIOID USE

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Introduction: A reported 25–33% of pregnant women with an opioid use disorder (OUD) have a comorbid psychiatric disorder. These comorbidities may contribute to poorer treatment adherence in medication assisted treatment (MAT) programs. The purpose of this study is to characterize psychiatric diagnoses and treatment and explore relationships among comorbidities and program adherence in women seeking prenatal care combined with MAT for OUD.

Method: Retrospective medical chart review was conducted for patients undergoing prenatal care at a multifaceted substance abuse treatment clinic that includes MAT, high-risk obstetric care, group counseling, and newborn planning. Preliminary analysis was conducted on 134 patients. Sample: majority Caucasian (86.6%), non-Hispanic (99.3%), Single (77.2%), Medicaid insurance (83.2%); $M_{\text{maternal age}} = 27.04$ ($SD = 4.08$), $M_{\text{gestational age at birth}} = 38.01$ weeks ($SD = 2.20$); 46.1% being treated with buprenorphine/naloxone, and 53.9% being treated with methadone at the time of delivery.

Results: Nearly half of the patients (46.3%) had at least one psychiatric diagnosis noted during pregnancy in their medical documentation. A high percentage of those patients (91.9%) had a historical psychiatric diagnosis, and 11.9% had a history of suicide attempt. Half had documented illicit substance use during pregnancy other than opiates. One-third were prescribed psychiatric medication during pregnancy (33.6%), but only 6.7% were in the care of a psychiatrist. Less than one-fifth (18.7%) were seeing a counselor outside of the MAT program. Additional analyses will explore relationships between substance use, program adherence, and psychiatric diagnoses.

Conclusions: The rate of comorbid psychiatric diagnoses during pregnancy reported here is higher than expected based on reported rates in the literature. This clinic is unique in its offering of multi-disciplinary prenatal support that includes regular social work and group counseling sessions, which may contribute to greater attention to psychiatric care among clinic providers. These results highlight the importance of including psychiatry in prenatal MAT. Information gathered from additional analyses will evaluate the potential influence that psychiatric problems may have on program adherence.

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RELIGIOSITY AND HEALTH RISK BEHAVIORS AMONG LATINO SEXUAL MINORITY MEN

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Objective: Sexual minority men (SMM) are at risk for a number of negative health behaviors, including substance abuse and condomless anal sex (CAS). Mixed findings are noted when examining religiosity and health outcomes in SM samples. Thus, the current study aimed to explore the association of three subcomponents of religiosity: organizational religious activity (ORA; i.e., public religious activity), non-organizational religious activity (NORA; i.e., private religious activity), and intrinsic religiosity (IR; i.e., degree of personal commitment to one's religion) in predicting illicit substance abuse and HIV sexual risk.

Methods: Participants were 151 Latino SMM recruited from the San Diego County area ($M = 24.18$ years of age, $SD = 3.19$), who completed online self-report questionnaires in either English or Spanish, which included items assessing frequency of various forms of illicit substance abuse and CAS with an HIV-positive or unknown partner. Binary variables were created representing use of illicit substances in the past month vs. no use, and a count variable of number of CAS partners. Religiosity was assessed using the three subscales (ORA, NORA, and IR) of the Duke University Religion Index (DUREL).

Results: Logistic regression models were conducted separately with each binary substance abuse variable entered as the criterion, and a negative binomial regression was conducted with CAS partners as the criterion. ORA, NORA, and IR were simultaneously entered as the predictor variables. ORA was associated with opiates ($OR = 1.47, p = .03$). NORA was associated with cocaine ($OR = 2.03, p < .001$), heroin ($OR = 1.84, p = .001$), opiates ($OR = 1.81, p = .002$), amphetamines ($OR = 1.82, p = .002$), sedatives ($OR = 2.36, p < .001$), and increased CAS partners ($B = .633, p = .01$). IR was associated with amphetamines ($OR = 1.22, p = .04$) and decreased CAS partners ($B = -.355, p = .03$).

Conclusions: Results indicate NORA is generally positively associated with the use of a number of health risk behaviors, whereas ORA and IR generally did not display significant associations with criterion variables. NORA may represent greater internalization of anti-gay religious doctrines compared to other components of religiosity. Clinicians may wish to recognize the unique ways religiosity may be associated with health behaviors of Latino SMM and address the potential perceived dissonance between identities these individuals may experience.

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SCREENING AND BRIEF INTERVENTION FOR ALCOHOL MISUSE IN SCHOOL-BASED HEALTH CENTERS: A RANDOMIZED TRIAL OF CHECK YOURSELF

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Purpose: School-based settings are a promising venue for delivery of substance use screening and brief intervention due to their accessibility. We developed the *Check Yourself* tool to automate multi-risk screening, give real-time motivational feedback on substance use and other health behaviors, and summarize results for providers prior to a visit at the school-based health center (SBHC). In this study, we compare care delivery and substance use outcomes for moderate to high risk adolescent alcohol users who received a visit at their SBHC with and without the *Check Yourself* tool.

Methods: We conducted a randomized controlled trial with 148 adolescents aged 13–18 who met criteria for moderate to high risk alcohol use, recruited from urban SBHCs. Participants were randomized to receive their SBHC visit with ($n=73$) or without ($n=75$) the *Check Yourself* tool. All SBHC providers received a brief training on the use of motivational interviewing to address substance misuse.

Results: Adolescents who received the *Check Yourself* tool + SBHC visit reported higher levels of alcohol (67%) and marijuana counseling (73%) from the provider during their visit, compared to those who received a SBHC visit without the tool (40% and 45% respectively, $ps=.02$). Relative to baseline, adolescents in both groups reduced their typical drinks of alcohol, maximum drinks of alcohol and hours high on marijuana over time ($ps < .02$). Adolescents who received *Check Yourself* reported perceiving that fewer of their peers use alcohol ($p=.001$) compared to those who did not.

Conclusions: SBHCs are an excellent venue for delivery of brief substance use interventions, as adolescents across groups who had a visit with a trained provider decreased the amount of alcohol use. Using an electronic screening and brief intervention tool can prompt providers to increase counseling of adolescents at risk for substance use. Additionally, the provision of personalized feedback with normative comparisons may impact adolescents' views about the extent to which other teens their age use substances.

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TRAUMA, POSTTRAUMATIC STRESS, AND NON-MEDICAL USE OF PRESCRIPTION DRUGS IN YOUNG ADULTS IN KOSOVO

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Prior research has documented substantial non-medical use of prescription drugs (NMUPD; i.e., without a physician's prescription) among young adults. Most previous studies have collected data from the United States, Western Europe, or Australia. The present study collected data from an anonymous sample of young adults (N = 300) referring for drug treatment in Kosovo, an independent state formed in the aftermath of the dissolution of Yugoslavia. Participants responded to questions assessing use of alcohol and illicit drugs, NMUPD, demographic information, traumatic experiences, and PTSD symptoms. Primary substances of use were: alcohol (75%), marijuana (50%), cocaine (24%), and heroin (16%). Overall, 49% of participants also reported NMUPD with sedatives the class of medications most commonly used without a prescription (42%), followed by analgesics (37%) and anxiolytics (13%). In some cases, participants reported combining the non-medical use of prescription medications with alcohol (29%) or illicit drugs (20%). Individuals who reported an interpersonal traumatic event (e.g., assault) were significantly more likely to report NMUPD (55%) than those who did not (33%); $\chi^2(1, N = 264) = 7.23, p < .001$. In a hierarchical logistic regression, PTSD symptoms significantly predicted NMUPD after controlling for gender, age, income, and education, OR = 1.07 (95% CI = 1.04, 1.09), $p < .001$. Findings suggest that NMUPD is a concern among young adults referring for drug treatment in Kosovo, some of whom report health-jeopardizing behavior such as combining the non-medical use of prescription medications with the use of alcohol or illicit drugs. Trauma history and PTSD symptoms were significant predictors of NMUPD. Clinicians working with young adults referring for substance use treatment should assess the non-medical use of prescription drugs, trauma history, and PTSD symptoms.

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ADVERSE LIFE EXPERIENCES AND NICOTINE USE AMONG SEXUAL MINORITY WOMEN

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Introduction: Sexual minority women (SMW) have unique stressors that place them at increased risk for nicotine use relative to their heterosexual counterparts. Less attention has been paid to the diversity of life experiences among SMW and how those experiences contribute to differential risk within SMW.

Methods: *Study 1.* We partnered with an LGBTQ+ service organization to recruit sexual and gender minorities in Texas. To reach individuals disconnected from the community, additional participants were recruited through a social marketing campaign. Participants reported how many days out of the past 30 they smoked tobacco, chewed tobacco or smoked e-cigarettes. A total of 543 cis women completed the web-based survey with an average age of 21.88 (SD=10.66). A third of the sample was Hispanic with 54.5% (N=278) identifying as White, Non-Hispanic. Most identified as a lesbian (39.6%, N=211) or bisexual (41.1%, N=219). *Study 2.* To explore whether smoking among SMW with adverse life experiences was a function of those experiences or whether there was something unique about being a SMW with those lived experiences; data from an interviewer-administered survey with those unstably housed was explored. A time-location sampling approach was used.

Results: *Study 1:* Approximately 1/3 of the sample reported that they had smoked in the past 30 days with just under 10% (N=53) reporting daily smoking. Age, race, ethnicity and sexual orientation were not significantly related to smoking. Experiences of sexuality-related discrimination (OR=1.37, $p < .001$) were significantly related to smoking in the bivariate model. In the multivariate model, education, substance use (AOR=1.59, $p < .001$), housing insecurity (AOR=3.52, $p < .001$), intimate partner violence-IPV (AOR=2.10, $p < .001$) and sex work (AOR=3.90, $p < .05$) were related to smoking. Among SMW participants, 20.3% (N=110) reported past year experiences of housing insecurity, IPV or sex work; those who reported these experiences accounted for 37.4% (N=68) of recent smokers and 66% (N=35) of daily smokers. Of those who reported 2+ life experiences, 91.89% (N=34) smoked in the past 30 days. Of those who reported all three life experiences (N=15), all reported smoking in the past 30 days and 88.2% reported smoking every day. *Study 2:* Homeless sexual minority women were almost twice as likely to report smoking relative to their heterosexual counterparts ($p < .05$).

Conclusions: Smoking was related to adverse life experiences among SMW. Although encouraging someone with multiple competing immediate needs to prioritize smoking cessation may be challenging, behavior change experts working with homeless individuals have started to prioritize smoking cessation programs given the long-term health benefits. The present study suggests the importance of tailoring these interventions to SMW since it is women at these intersections who may be at greatest risk.

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ASSOCIATION BETWEEN SYNDemic FACTORS AND CIGARETTE SMOKING AMONG TRANSGENDER WOMEN RESIDING IN NEW YORK CITY

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Background: Smoking presents a greater risk of harm for HIV-positive individuals both from the cardiovascular standpoint and increased risk of various cancers and emphysema. Transgender women (TGW) experience higher rates of cigarette smoking compared to other groups. Despite these disparities, TGW are not included in smoking prevention interventions and pose a significant challenge to HIV-positive TGW and their providers. We considered the syndemics framework – assessing the presence of depression, childhood sexual abuse (CSA), intimate partner violence (IPV), and polydrug use – to help explain the greater prevalence of current smoking among TGW. The current study sought to address smoking prevention challenges by focusing on an understudied population.

Methods: The sample included 213 TGW in NYC recruited for a group-based intervention study targeting substance use and sexual risk. Logistic regression was used to assess the association between syndemic factors (individually, and as a summed score or count) and current smoking at the baseline assessment (i.e., pre-intervention).

Results: The sample was predominantly TGW of color – Black (31.9%) and Latina (28.2%); mean age was 34 and 34.7% were HIV-positive. Overall, nearly half of the participants (42.7%) reported as current smokers. In bivariate analyses, being Black, HIV-positive, unemployed, identifying as straight, and having lower income were positively associated with greater odds of current smoking, as were three of the four syndemic factors: CSA, IPV, and polydrug use. Age, education, and relationship status were not. In the multivariable model, adjusting for each of these covariates, having a greater number of syndemic factors was associated with increased odds of current smoking (AOR=1.4, *pp*

Conclusions: Having a greater number of syndemic factors was a significant predictor of current smoking. Our findings highlight the need for smoking-reduction interventions to also address syndemic factors among TGW, particularly among HIV-positive TGW. This has implications to increased training of healthcare providers in promoting smoking cessation interventions during regular visits. Health care providers have a unique opportunity to engage this population in a discussion of their personal strength, lifestyles, barriers and medication adherence and provide support to quit smoking successfully for those who are at high risk for cardiovascular disease.

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ADDRESSING TOBACCO USE AMONG ASIAN AMERICAN PATIENTS WITH CHRONIC HEALTH CONDITIONS IN PRIMARY CARE

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Background: Smoking causes and worsens many health conditions, but tobacco use might not get addressed in many clinical visits due to time, competing clinical demands or other factors. Asian American male immigrants have high rates of smoking. This study examined documentation of the 5As (Ask, Advise, Assess, Assist, Arrange) among Asian American male patients who are smokers at a federally qualified health center.

Methods: We utilized electronic Health Record (EHR) data of 106 Asian American male daily smokers who participated in one of the two smoking cessation intervention trials. De-identified EHR progress notes, limited to one primary care visit immediately prior to trial enrollment, were coded for presence or absence of the documentation of the 5As. We used generalized estimating equations to adjust for provider clusters and examined the associations between selected health conditions and the occurrence of EHR-documented 5As.

Results: The participants' mean age was 56 (range: 28–73), with 62% Vietnamese, 24% Korean, and 14% Chinese. The mean cigarettes smoked daily was 9.4. Most (90%) had at least one chronic conditions: hyperlipidemia (68%), hypertension (59%), diabetes (30%), respiratory (20%), cancer (9%), cardiovascular (8%), or behavioral health (31%). The proportions of patients who had a 5A action documented in their progress notes of the selected visit were: 77% Ask, 25% Advise, 30% Assess, 14% Assist, and 8% Arrange. Tobacco-related discussion (Advise, Access or Assist) was documented in 46.2% of the patients, with diabetic patients less likely to have discussion documented (OR=0.4; *p*=0.04) than those who did not have diabetes. Patients with a behavioral health diagnosis were more likely to have "Advise" documented than those without such diagnosis (OR=3.1; *p*=0.02). Overall, 17% had no smoking related information noted, with cardiovascular patients more likely to have no smoking related documentation (OR: 5.5; *p*=0.02) than those who did not have cardiovascular disease.

Conclusions: While tobacco use related information was frequently documented, tobacco-related discussion was documented among slightly <50% of the patients including many with chronic conditions. Investigations are needed to identify and address barriers for providing tobacco intervention such as lack of time during a visit, provider training and patients' readiness for quitting.

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BODY IMAGE AND CIGARETTE SMOKING AMONG YOUNG SEXUAL MINORITY LATINO MEN

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Background: Sexual minority Latino men, an understudied population, engage in high rates of cigarette smoking. For example, the prevalence of smoking within the past 30 days among sexual minority Latino men in California was 41.8%, compared to 20.1% of their heterosexual counterparts. To date, no known studies have examined predictors of smoking specific to sexual minority Latino men. Body image variables have previously been explored as a predictor of cigarette smoking among women and college students; however, findings have generally been mixed. One explanation for these findings is the lack of testing interaction effects. Being preoccupied with one's weight, for instance, may only be associated with increased smoking under certain conditions. One such condition to explore is appearance orientation—cognitively and behaviorally investing in the importance of one's appearance. Thus, the current study explored the association between overweight preoccupation and smoking in addition to the moderating effects of appearance orientation on this association among a highly vulnerable group—young sexual minority Latino men.

Methods: Participants were 151 sexual minority Latino men living in the San Diego area ($M=24.18$ years old, $SD=3.19$) who completed an online study. The Multidimensional Body-Self Relations Questionnaire (MBSRQ-AS) was used to assess appearance orientation (AO), and overweight preoccupation (OWPRE). In addition, participants indicated the number of cigarettes they smoked per day. A binary variable was created: 10+ cigarettes/day vs. less than 10 cigarettes/day. A logistic regression model was conducted, using OWPRE as the focal predictor and AO as the moderator.

Results: A significant interaction between AO and OWPRE was revealed (OR: 0.08; 95% CI: 0.02, 0.38; $z = -3.2$; $p = .002$). Probing AO at low and high levels through simple slope analysis revealed that OWPRE predicted lower odds of smoking 10+ cigarettes/day only at high levels of AO (OR: 0.18; 95% CI: 0.06, 0.56; $z = -2.9$; $p = .003$).

Conclusion: Possessing high investment in one's appearance may serve as a protective factor against smoking behavior among sexual minority Latino men. Preoccupation with one's weight in combination with low levels of appearance orientation is indicative of higher rates of smoking. Interventions pertaining to the harmful effects of smoking on appearance may be effective in reducing smoking and its associated risks within this vulnerable population.

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DO CHANGES IN FOOD INSECURITY AFFECT SMOKING STATUS? ANALYSIS OF THE 2003 AND 2015 PANEL STUDY OF INCOME DYNAMICS

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Smoking is disproportionately high among individuals who are socioeconomically disadvantaged. Food insecurity arises from lack of money or adequate access to enough food and is a stressor. Cross-sectional studies have reported that food insecurity is independently associated with higher smoking prevalence. We examined whether experiences of food insecurity over time were associated with changes in smoking status in a national longitudinal sample.

We analyzed data from the Panel Study of Income Dynamics, following 4,563 adult respondents from 2003 (current study baseline) to 2015. The outcome variable was smoking status change (continued smoking, stopped smoking, started smoking, and remained non-smoking). The primary independent variable was food insecurity status change (stayed food secure, stayed food insecure, became food insecure, and became food secure). We conducted logistic regression analyses using survey weights. Model 1 examined the likelihood of stopping vs. continuing smoking by 2015 among smokers at baseline, covarying average number of cigarettes per day at baseline. Model 2 examined the likelihood of starting smoking vs. remaining non-smoking by 2015 among non-smokers at baseline, covarying whether one ever smoked regularly. Both models controlled for socio-demographics, psychological distress, and receipt of food assistance.

The sample consisted of 75% men with a mean age of 47 years at baseline (2003), and were 13% African American and 75% White. From 2003 to 2015, 13% continued smoking, 10% stopped smoking, 2% started smoking, and 75% continued non-smoking; 84% stayed food secure, 5% stayed food insecure, 8% became food insecure, and 4% became food secure. In Model 1, becoming food insecure (vs. staying food secure) was independently associated with lower likelihood of stopping smoking (AOR=0.52, 95% CI 0.30, 0.88) among smokers at baseline. In Model 2, becoming food insecure (vs. staying food secure) was independently associated with higher likelihood of starting smoking (AOR=4.00, 95% CI 2.03, 7.86) among non-smokers at baseline.

Experiences of food insecurity were associated with smoking status over time for both smokers and non-smokers. In particular, those who became food insecure were less likely to stop smoking and more likely to start smoking. These results underscore the importance of considering the role of food insecurity in reducing socioeconomic disparities in cigarette smoking.

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MOTIVATIONS FOR TOBACCO USE AND BARRIERS TO CESSATION AMONG URBAN YOUNG ADULTS IN BALTIMORE: FINDINGS FROM A QUALITATIVE STUDY

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Background: The landscape of tobacco use is rapidly changing. Evidence suggests that place of residence may be associated with smoking whether independently of, or in conjunction with, variables such as education, income, and socioeconomic status. In 2007, the prevalence of current smoking in Baltimore City surpassed Maryland's statewide prevalence by more than 10%. Moreover, poly-use of tobacco is increasing, with 12% of current adult tobacco users in 2014 reporting the use of more than one type of tobacco product during the past 30 days. While there is considerable research on cessation generally, there is less in-depth data on this population. Mobile-based programs are a potentially useful cessation tool for this population. This type of data is needed to inform effective cessation programs.

Objective: We sought to understand young adults' motivations for tobacco use, their perceived barriers to cessation, and their thoughts on mobile cessation programs (e.g., apps, text-based programs).

Methods: We engaged 97 tobacco users between the ages of 18 and 26 from Baltimore County, Maryland across 17 focus group discussions. Qualitative data were analyzed using framework analysis.

Findings: 85% (n=82) of our participants reported using more than one type of tobacco product during the past 30 days. Across tobacco products, the common theme for motivation of initiation, continued use, and poly-use included: boredom due to inactivity, the need for stress relief, the influences from family members and friends, and easy access to the variety of tobacco products. With regards to barriers to cessation, sub-themes that surfaced included the idea of self-control, belief that one was not actually addicted, and the influence of those within their social networks. Finally, mobile-based cessation programs were viewed favorably by our participants, with everyone indicating that these programs would substantially be more appealing than other paper- or phone-based cessation tools. Discussions suggested that the ideal program would provide tailored/customized prompts along the way, delivering cues to action such as relatable messages that would assist its' users along their own tobacco cessation journey. Existing social media platforms should also be leveraged for use to promote or deliver the cessation program.

Significance: Cessation programs for this population must address/account for poly-use. Use of other substances concurrently with tobacco must be addressed. Mobile technology and social media allow youth to manage cessation in their own time, and it fits into their existing patterns of media use and lifestyle, serving as a cue to action. But, this is not enough. Cessation programs (e.g., quit lines) may not be enough and are not addressing the built environment. Policies to address tobacco use could be better enforced (smoke-free homes, no sale of "loosies").

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SMOKING DIFFUSION AMONG DIVERSE, URBAN AMERICAN ADOLESCENTS DURING HIGH SCHOOL

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Background: Influence from peers and friends is a consistent and important predictor of smoking initiation and regular cigarette use among adolescents, and youth rarely initiating smoking without exposure to smoking friends. Social network analysis has been applied to examine smoking diffusion through adolescent social networks, and the underlying social selection and social influence processes, however common limitations of this work include: a focus on 'case studies' of one or two networks; data collected before the year 2000; longitudinal data that span one year or less; and samples that lack diversity.

Aims: This study investigates the diffusion of smoking initiation among 1,425 diverse high school students (76% Hispanic) nested in four U.S. high schools from one urban neighborhood, and tracks changes in their friendship networks and smoking behaviors over four time points from 2010 to 2014, over their full 3-year high school period.

Methods: Regression models and longitudinal social network models (stochastic actor-based models; SABMs) were applied to test if high school friendship networks predict smoking initiation and diffusion. SABMs teased apart social selection and social influence effects related to smoking.

Findings: At the start of the 10th grade, about 1 in 4 students had initiated smoking, and by the end of the 12th grade, between one third and one half of students had initiated smoking, with rates varying by school. We found strong evidence of smoking initiation diffusing through friendship networks over the high school period, in 3 of the 4 schools. In these three schools, exposure to friends who had tried smoking predicted smoking initiation among non-smokers. In these schools, smoking was also closely linked to popularity in the friendship network: students who had initiated smoking gained popularity during high school.

In the one school where smoking initiation was not influenced by the friendship network, having friends who had tried smoking, or who smoked in the past month, did not predict smoking initiation. This school context was notably different on several dimensions: it had higher smoking rates and pro-smoking norms, and students who had initiated smoking became less popular during high school. We discuss the potential impact of school contextual factors, such as smoking norms and smoking popularity, on the diffusion of smoking initiation in adolescent friendship networks.

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EVALUATION OF EMPOWERING PROMOTORES TO BE COMMUNITY-BASED TOBACCO CONTROL SPECIALISTS

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The Empowering Promotores Program (EPP) trains and supervises Community Health Workers/Promotores de Salud (CHW/PdS) to work as tobacco control specialists in their local communities. The program also assists CHW/PdS with the development of Community Action Plans, tailored to the unique needs, resources, and contexts of their communities. Finally, the program provides ongoing supervision and support of community-based education and cessation activities.

In this first implementation, the EPP recruited 9 CHW/PdS and trained them to lead community-based educational activities, use brief intervention strategies (including motivational interviewing) to encourage cessation, and advocate for social justice surrounding tobacco. Training also facilitated the development of Community Action Plans that included cessation, education, and sustainability components. Following training, program supervisors monitored and assisted the CHW/PdS as they implemented their plans over seven months.

Evaluation data was collected during training and program implementation. During the 3-day training, CHW/PdS completed knowledge checks before and after each content module and also reported their perceived confidence regarding mastery of the material and ability to teach the content to others. After, they provided their overall rating of the training and rated how well the program met their training goals. During program implementation, outcome data was extracted from standard data collection logs that CHW/PdS completed at monthly intervals.

Analysis revealed that the training course improved knowledge by over 24% across all training modules from pre-test ($M=43.65\%$, $SD=17.50$) to post-test ($M=68.36\%$, $SD=18.36$); $t(35)=-6.53$, $p<.001$. Training also significantly improved perceived mastery of the material from pre-test ($M=3.36$, $SD=0.88$) to post-test ($M=6.76$, $SD=0.35$) on a 7-point scale; $t(6)=-9.17$, $p<.001$. Confidence to teach the material also significantly increased from pre-test ($M=3.10$, $SD=1.17$) to post-test ($M=6.74$, $SD=0.40$); $t(6)=-7.90$, $p<.001$. Furthermore, CHW/PdS rated the training positively ($M=6.90$) and felt it met their training goals ($M=6.52$).

Outcome data indicated that the program met or surpassed objectives related to program reach and impact. Some examples: CHW/PdS engaged 3,683 individuals in over 85 locations across southern NM, educated 467 class attendees, and counseled 120 tobacco users with a quit plan. These results provide support for the EPP.

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HETEROGENEITY IN TOBACCO USE BEHAVIOR AMONG US BLACKS PER WORLD REGION OF BIRTH

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Background: Smoking-related illnesses are the number one causes of death in the US Black community. US Blacks are a heterogeneous population by country of origin, but few previous studies investigated the prevalence of smoking among US Blacks by country of origin and age of immigration. We aim to examine the differences in tobacco-use behaviors among US Blacks by world region of birth and age of immigration.

Methods: Data from the 2006–2015 waves of the Current Population Survey–Tobacco Use Supplement was analyzed. We included participants who self-identified as Black race only ($n=48,912$). Based on participant self-reported country of origin, countries were classified into world regions (US, Africa, Europe, West-Indies). Age of immigration was calculated based on age, survey year, and self-reported year entering the US, dichotomized into before 13 vs. at or after 13 years of age. Participants reported their tobacco use behaviors (e.g., current cigarette and cigar smoking). Covariates included survey year, age, education, income, and U.S. census region. Data were weighted to be representative of the US Black population. Multiple logistic regression models adjusted for covariates were used to examine the associations between world region of birth, age of immigration, and tobacco use behaviors.

Results: Prevalence of current cigarette smoking among US Blacks varied significantly by world region of birth (US-born=17%, European-born=18%, African-born=5%, West Indian-born=5%; $p<0.01$). Compared to US-born Blacks, African-born Blacks were less likely to be current cigar smokers (AOR=0.06, 95% CI=0.01, 0.35). Among current smokers, African-born Blacks were less likely than US-born Blacks to start smoking regularly before 18 years of age (AOR=0.35, 95% CI=0.12, 0.99). Foreign-born Blacks are also less likely than US-born Blacks to smoke menthol flavored cigarettes ($p<0.05$). Furthermore, African-born Blacks are less likely than US-born Blacks (AOR=0.31, 95% CI=0.11, 0.86) to have their first cigarette within 30 minutes after waking up.

Conclusion: Tobacco use behaviors somewhat varied by world region of birth and age of immigration among US Black population. Interventions for smoking prevention and cessation need to recognize these differences. Further research is needed to examine the heterogeneity in perceptions and beliefs on tobacco-use behaviors within the US Black to inform tailored interventions.

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INITIATION, CONTINUATION OF USE, AND CESSATION OF ALTERNATIVE TOBACCO PRODUCTS AMONG YOUNG ADULTS: A QUALITATIVE STUDY

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Background: Diverse non-cigarette alternative tobacco products are increasingly popular in the United States, particularly among young adults. This study investigates reasons young adults initiate and continue use, potential motivations to quit, and strategies or approaches for cessation of alternative tobacco products. Products assessed included cigarettes, little cigars/cigarillos (LCCs), smokeless tobacco, e-cigarettes, and hookahs.

Methods: As part of a larger research study, we conducted 60 in-depth telephone interviews with tobacco users aged 18–24 years enrolled in college in the state of Georgia. Qualitative analytical techniques were used to code line-by-line and identify themes emerging from the data.

Results: Reasons for initiation, continued use, and (potential) cessation show both similarities and differences across tobacco products. Most commonly cited reasons for initiation include peer influence (all products), flavors and tastes (all products except for cigarettes), and ease of environmental access and/or low costs (LCCs, smokeless tobacco, and e-cigarettes). Participants discussed several influences on continued use such as peer influence (cigarettes, LCCs, and hookahs), stress management (all products except for hookahs), and co-use with other substances (cigarettes, LCCs, and hookahs). Primary motivations for cessation mentioned by participants were family responsibilities (cigarettes, e-cigarettes, and hookahs) and concern about current and future health (all products except for e-cigarettes). Frequently used strategies for cessation include avoidance of other tobacco users (cigarettes, LCCs, and hookahs) and reduction of nicotine intake (cigarettes and e-cigarettes).

Conclusions: Our findings suggest that researchers and health professionals should consider the differences in reasons for use and discontinued use of the range of tobacco products in order to develop targeted messaging strategies, particularly noting the differential impact of interpersonal influences and health concerns. We also point to a need for regulatory action that limits diversification and accessibility of different tobacco products.

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LIVING WITH OTHER SMOKERS: DOES IT HELP—OR HURT—CANCER PATIENTS WHO SMOKE?

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Significance. Living with smokers might affect how oncology patients perceive the harms of smoking. Understanding these differences might improve cessation programs for oncology patients.

Methods. The sample consisted of 829 adult smoking oncology patients in the Mid-South surveyed about the effects of smoking on a cancer diagnosis. Participants responded to statements about the potential harms of smoking. Such statements involved beliefs about whether smoking causes cancer; whether smoking can lead to a second cancer; whether smoking interferes with the benefits of cancer treatment; whether smoking exacerbates the side effects of treatment; and whether quitting smoking improves one's health even though advanced cancer is present. Each statement was rated as *Very True* (0), *Somewhat True* (1), *Somewhat Untrue* (2), and *Very Untrue* (3).

Analysis. In this report, we explored differences between those living with no smokers (n=478), one smoker (n=251), vs. two or more smokers (n=100) on items measuring perceptions of potential harms of smoking. ANOVA revealed significant differences in perceptions between groups on two of our five questions about smoking-related harm, ps < .02. Follow-up tests revealed that those living with two or more smokers (M=2.16) were more likely than those living with no smokers (M=2.47) to report that people with cancer who smoke are at a higher risk of developing a second cancer. Similarly, those living with two or more smokers (M=2.05) were more likely than those living with no smokers (M=2.37) to believe that cigarette smoking can worsen the side effects of cancer treatment.

Conclusion. Results indicate that cancer patients living with two or more smokers are more likely to acknowledge smoking-related harms. It appears that cancer patients who live alone are more likely to deny the damage tobacco use can have on their treatment and possible recovery. Cessation programs in an oncology setting should consider targeting smokers who are the only smokers in their home for special intervention.

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PREDICTORS OF SMOKING INITIATION AND PROGRESSION IN LOW INCOME YOUNG ADULTS

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Background: Despite vast regulations limiting access to cigarettes, and environmental restrictions on where one can smoke, cigarette smoking remains the leading preventable cause of morbidity and mortality worldwide. Adolescence is a critical period for initiation and progression to a regular smoking habit, with the majority of adult regular smokers initiating smoking before age 18. Yet, less is known about smoking progression post high school in young adulthood, especially among low socioeconomic status (SES) youth, the population most likely to progress to a regular habit. We sought to better understand what factors predict cigarette smoking initiation and progression in low-SES young adults.

Methods: We obtained a nationally representative sample of data from the Panel Study of Income Dynamics (PSID), Transition to Adulthood (TA) supplement. Participants were (n=1,510) young adults who turned 18, completed or left high school, had families continuing to participate in PSID, and who had participated in a federal lunch program; our indicator of low SES (71.4% of the available sample). Using Latent Growth Curve Modeling (LGCM) to model individual trajectories of cigarette smoking (across four waves, 2007–2013), we assessed which low SES and smoking-related factors (i.e., sex, ethnicity, maternal smoking, peer smoking, family fighting/conflict, emotional disturbance, and adolescent sense of belonging) predicted smoking behavior at baseline as well as over time.

Results: Peer smoking (OR=1.398, 95%CI = 1.204, 1.622) and having a high school education or less (OR=2.109, 95%CI = 2.106, 3.686) were associated with higher odds of smoking at baseline. By contrast, being Black (OR=0.745, 95%CI = 0.579, 0.745), and living with a family that does not fight often/low family conflict (OR=0.833, 95%CI=0.716, 0.968) were associated with a decrease in the odds of baseline smoking. Having a high school education or less predicted continued smoking progression beyond baseline (OR=1.084, 95%CI=1.009, 1.166).

Discussion: Efforts aimed at reducing smoking in young adults warrants a unique perspective in conceptualizing how family factors influence smoking progression. These findings support development of targeted programs to address how smoking among low-SES youth develops, and provide insight into possible intervention points to address how family difficulties may affect smoking behaviors during this developmental period.

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PREVALENCE AND CHARACTERISTICS OF SECONDHAND SMOKE AND SECONDHAND VAPOR EXPOSURE AMONG YOUTH IN FLORIDA

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Background: Secondhand smoke (SHS) exposure causes significant health issues. While less is known about the health effects of secondhand vapor (SHV) from electronic vapor products (EVP), recent evidence suggests it is not benign. We aim to describe the characteristics associated with past 30-day SHS and SHV exposure among a representative sample of youth in Florida.

Methods: Data from youth in middle school (MS, ages 11–13) and high school (HS, ages 14–17) who completed the 2016 Florida Youth Tobacco Survey were analyzed (n= 58,616). SHS and SHV were independently assessed by self-report of being in a car and/or room with someone using cigarettes or EVP, respectively. Demographics, environmental factors, cigarette and EVP use status, and SHS and SHV related beliefs were assessed. Descriptive statistics and weighted multivariable logistic regressions were performed.

Results: Overall, 42% of the sample reported SHS exposure and 29% reported SHV exposure during the past 30-days. The prevalence for each was higher in HS than MS youth. SHS and SHV exposure was most common among non-Hispanic white youth (48% and 37%, respectively), followed by non-Hispanic American Indian/Alaskan Native youth (43% and 36%, respectively). Housing type was associated with SHS exposure, with prevalence rates higher among those living in trailers/mobile homes than those in stand-alone houses (AOR 1.59, 95% CI 1.46-1.73). Nonmetropolitan youth were more likely to be exposed to SHS than metropolitan youth (AOR 1.11, 95% CI 1.03-1.20) but less likely to be exposed to SHV (AOR 0.86, 95% CI 0.81-0.87). Beliefs on the harms of SHS and SHV had differing associations with exposure to SHS and SHV. Prevalence of SHS (AOR 1.71, 95% CI 1.53-1.91) and SHV (AOR 1.95, 95% CI 1.74-2.19) was higher among youth who believed SHS was harmful compared to youth that did not. Conversely, belief that SHV is harmful had a negative association with SHS exposure (AOR 0.86, 95% CI 0.81-0.92) and SHV exposure (AOR 0.55, 95% CI 0.52-0.59).

Conclusions: Factors associated with SHS and SHV exposure are similar but not identical. Interventions targeted at reducing SHS will likely have an impact on SHV as well if smoke free education and policies are expanded to be tobacco free initiatives. More research is needed to understand in what settings youth are being exposed to both SHS and SHV. Further, the sources that inform youth's beliefs regarding SHS and SHV should be investigated.

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PROGRAM UTILIZATION AND QUIT OUTCOMES BY MODE OF ENTRY AMONG CLIENTS ENROLLED IN A QUITLINE

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Tobacco cessation quitlines are an integral part of comprehensive tobacco treatment nationally. Clients enter quitline services through direct referrals from a health care provider (provider referral), or proactively call the quitline on either advice from their health care provider (passive referral) or through other sources like media or family and friends (self-referral). While provider referral systems are a cost-efficient model to expand quitline reach, research evaluating differential change in clients' smoking behavior based on mode of entry is limited. The purpose of this study was to examine how mode of entry may influence program utilization and quit outcomes in clients enrolled in the Arizona Smokers' Helpline. Clients who completed a 7-month follow-up phone visit between January 2011 and June 2016 ($N=18,650$) were categorized by mode of entry as provider proactively referrals (27%), passive referrals (9%), or self-referrals (63%). Logistic regression was used to measure the association between mode of entry and use of tobacco cessation medication and quit outcomes (30-day tobacco abstinence) at 7 months. Multinomial logistic regression was used to measure the association between mode of entry and number of coaching sessions. After controlling for potential confounders, compared to self-referred clients, provider referred clients were least likely (OR, 0.88; 95% CI, 0.81–0.97), while passively referred clients were most likely (OR, 1.14; 95% CI, 1.00–1.30), to report tobacco abstinence. Proactively referred (OR, 0.79; 95% CI, 0.70–0.88), but not passively referred, clients were 21% less likely to report tobacco cessation medication use than self-referred clients. There was no significant association between mode of entry and number of coaching sessions. Unlike many previous studies, we found that proactive referrals were associated with lower utilization of tobacco cessation medication and less successful quit outcomes. We also found that passively-referred smokers are a unique group. In addition to optimizing use of cessation medication, there is a need to examine potential barriers among both providers and provider-referred clients enrolling into quitline services.

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TESTING THE MECHANISMS OF ACTION OF INTEGRATED TELEMEDICINE FOR SMOKING CESSATION USING SELF-DETERMINATION THEORY

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A recent randomized controlled clinical trial for rural smokers—Connect2Quit—compared the effectiveness of telemedicine counseling that was integrated into smokers' primary care clinics (Integrated Telemedicine—ITM) versus quitline-like telephone counseling (QL), delivered to smokers in their homes. The interventions delivered in this trial were based on Self-Determination Theory (SDT). Mediation analysis of theoretically-based behavioral RCTs can advance understanding of behavior change theory as well as specific intervention mechanisms. The aim of this study was to evaluate our SDT-based conceptual model using mediation analysis to evaluate the effects of telemedicine and phone counseling on smoking cessation. The sample included 560 smokers from rural Kansas. The counseling format and content were designed to be the same across both conditions (ITM vs QL), and took place in four sessions between study baseline and month 3. Follow-up assessments were conducted at months 3, 6 and 12. The analysis used structural equation modeling (SEM) with latent change scores for the SDT constructs, which were measured at baseline and 3-months. The outcome measure was biochemically verified 7-day point prevalence at 12-months. Mediating paths were estimated using maximum likelihood and their confidence intervals were estimated using Monte Carlo simulation. Participants in ITM reported significantly greater perceived health care provider autonomy support compared to participants in QL ($b = .347, p < .05$). At 3-months, therapeutic alliance ($b = .508, p < .05$) and change in perceived support provided by health-care providers ($b = .164, p < .01$) predicted gains in perceived competence to quit smoking (PC). Change in PC was associated with greater odds of cessation at 12 months ($OR = 1.50, p < .01$). The mediation analysis showed that compared to quitline, ITM was indirectly associated with quitting smoking by increasing perceived autonomy support and perceived competence to quit smoking (indirect effect = .029, 95% CI [.004, .053]). Integrated telemedicine influences the likelihood of smoking cessation by enhancing perceived support from the healthcare team, rather than enhancing perceived interpersonal support through telemedicine. These results provide theoretically informed support for the integration of smoking cessation services—even those delivered from a distance—into primary care settings.

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TOBACCO CONSUMPTION PATTERN AMONG AUTO RICKSHAW DRIVERS IN CHENNAI CITY, TAMIL NADU, INDIA

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Background: Tobacco use is a major preventable cause of premature death and diseases, currently leading to five million deaths worldwide which are expected to raise over eight million deaths worldwide by 2030. India is the second largest consumer of tobacco in the world. Cigarettes and Other Tobacco Products Act (COTPA) is a powerful Indian national law on tobacco control. The prevalence of tobacco use among adults (15 years and above) is 35% and the prevalence of overall tobacco use is 48% among males. This study is contemplated with an aim to assess the prevalence of tobacco consumption and the associated factors involved in its consumption, as this group of the population is under constant pressure and account for the workforce of the country. So through this study we could be able to know

* The reasons of consumption. * Amount of consumption * Awareness of ill effect of tobacco consumption * Out of Pocket expenditure.

MATERIALS AND METHODS: A cross sectional descriptive study was conducted among 400 Auto Rickshaw Drivers in Chennai City. Auto drivers who were working for more than two years and present on the day of examination and who were willing to participate in the study were included. Cluster random sampling technique was used. Data was collected using a Survey Proforma which comprised of a Questionnaire which can assess the frequency of consumption, age of initiation, the amount of consumption, mental stress, economic factors, any past history of disease and most importantly the awareness towards oral cancer. Age, tobacco consumption pattern, reasons of consumption, amount of consumption, harmful effects of tobacco are the variables. Chi-square test was used to test the significance between groups.

RESULTS: Prevalence among auto rickshaw drivers for consumption of tobacco products was very high (87%). Auto rickshaw drivers were mostly used tobacco in the form of Gutkha (72%) and bidi (40%) in comparison to other products. It also shows that they use cheap tobacco products. Most of the auto rickshaw drivers start using tobacco products in age less than 18 years (80%) and associated factors for tobacco use are due to friends and their influence (78%). Awareness level among auto rickshaw driver was high (70%) but still uses tobacco products because of its addiction (66%). In the opinion of auto rickshaw drivers increase in tax may reduce its consumption and the majority of drivers (70%) think that tobacco must be banned.

CONCLUSION: Prevalence of tobacco use among auto rickshaw drivers was very high. Mostly they use tobacco products to reduce stress, to be awake or to remove nervousness but a large number of participants also use them without any reason. Almost one half of the study population was suffering from tobacco related diseases like cough, ulcer on mouth, lung disorder. They are in definite need of tobacco cessation activities.

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Key words: Tobacco, Awareness, Prevalence, Addiction.

F001

6:15 PM-7:15 PM

DEVELOPMENT OF A BILINGUAL MOBILE APP TO IMPROVE ADHERENCE TO ENDOCRINE HORMONE THERAPY AMONG BREAST CANCER PATIENTS

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Background: Adjuvant endocrine hormonal therapy is highly effective and appropriate for nearly all women with hormone receptor-positive tumors, making such treatment the most widely prescribed therapy for patients with this type of breast cancer. Despite the proven benefits in reducing cancer recurrence and improving survival, hormone therapy adherence is suboptimal (less than 80%). About 33% of patients do not take their medication as prescribed and are at increased risk of disease recurrence and increased mortality.

Objective: We present the design and development process of a theory-based, culturally tailored, interactive mobile app to improve adherence to endocrine hormone therapy among breast cancer patients as the initial phase of a two-group randomized clinical trial study.

Methods: Four focus groups (n=21) were conducted with breast cancer patients and personal semi-structured interviews (n=8) with oncologists, nurses, and patient navigators to assess barriers and facilitators to endocrine hormone therapy adherence, key symptoms, app content, and features. Qualitative data informed the initial design and development of app mock-ups; these were assessed with two additional focus groups (n=10) and based on formative research a functional phone app prototype was developed for beta testing.

Results: Inputs from patients and healthcare team members helped to identify specific app content and features. Key themes included the importance of increasing patient education, enhancing self-efficacy, facilitating communication with the medical team and helping patients to develop self-care skills to promote optimal adherence to hormone therapy. Specific app features included notification pop-ups, reminders, motivational messages, symptom tracking and management tips, educational content, social networking among patients, communication with a patient navigator, local resources, including support groups, and technical support. In addition to colors, background and icon preferences, patients emphasize the need for a user-friendly app that is easy to navigate with simple and clear educational content.

Conclusions: We followed an iterative and patient-centered design process to develop a bilingual, culturally tailored and interactive mobile app prototype to be used in a randomized control trial. The anticipated outcome is a scalable, evidence-based and easily disseminated intervention with potentially broad use to patients using oral anticancer agents.

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F002

6:15 PM-7:15 PM

THE ROLE OF SLEEP LATENCY AND SUBJECTIVE PAIN ON THERMAL PAIN SENSITIVITY IN GYNECOLOGIC CANCER

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Background: Pain is a common experience for women diagnosed with gynecologic cancer, contributing to greater depressed mood, sleep disturbances, and likelihood of future chronic pain. However, few studies have used quantitative sensory testing (QST) to examine the relationship between quantitative pain and psychosocial factors in gynecologic cancer.

Methods: Participants were 43 women ($Mage=59.77\text{yrs}\pm 10.06$) enrolled as part of a larger RCT examining psychological intervention effects on health and well-being in gynecologic cancer. Six to eight weeks following gynecologic cancer surgery, participants completed baseline assessment of depressive symptomatology (Beck Depression Inventory-II), sleep quality (Pittsburgh Sleep Quality Index, PSQI), and subjective pain (McGill Pain Questionnaire, MPQ). All participants underwent a temporal summation of pain protocol via QST. Heat was applied to the volar surface of the forearm with stimuli increasing from 45°C to 52°C. Participants were asked to rate their pain during testing (peak pain intensity), and 15 and 30 seconds after stimulus removal (after sensation pain).

Results: After controlling for (a) factors associated with cancer pain (surgical invasiveness, receipt of chemotherapy, poor prognosis cancer type, advanced cancer stage), (b) history of chronic pain, and (c) pain medication use prior to testing, bootstrapped linear regression analyses revealed greater sleep onset latency ($B=3.153$, $p=.042$, BCa 95% CI: .302–6.374) and greater MPQ sensory pain scores ($B=.711$, $p=.022$, BCa 95% CI: .110–1.199) were independently associated with greater after sensation pain at 15 seconds. Only greater MPQ sensory pain scores were associated with greater after sensation pain at 30 seconds ($B=.290$, $p=.031$, BCa 95% CI: .017–.496). Depression was not significantly associated with peak pain intensity or after sensation pain. The overall models accounted for 41.7% and 43.8% of the variance in after sensation pain at 15 and 30 seconds, respectively.

Conclusions: These results suggest that greater time to sleep onset and subjective sensory pain are related to greater after sensation of experimentally-induced pain in women receiving major abdominal surgery for gynecologic cancers. By identifying those with greater sleep disturbances and higher reported subjective pain, we may be able to identify women at-risk for central sensitization of clinical pain. Future research should explore whether interventions that improve sleep and subjective pain may contribute to lower pain sensitivity and better quality of life in women with gynecologic cancer.

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F003

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A PROSPECTIVE, PILOT STUDY OF A MOBILE APP TO INTERVENE ON CANCER PATIENTS' FINANCIAL BURDEN

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Purpose: Patients with cancer are facing increasing treatment-related financial burdens in the form of out-of-pocket expenses and are often unaware of resources available to help them. The primary purpose of this study was to evaluate the usability of Bridge, a mobile app designed to navigate patients to financial assistance programs. The secondary purpose was to determine whether Bridge could increase knowledge of financial aspects of cancer care.

Methods: Adults with cancer who reported out-of-pocket treatment-related costs and were receiving treatment in solid tumor oncology clinics were asked to utilize the app. Bridge uses patients' age, diagnosis, treatment regimen, insurance status, and household income information to determine eligibility and generate a personalized list of financial assistance programs from a proprietary database. Diagnosis and treatment regimen were manually inputted into the app by study staff. Patients manually entered their age, household size, income, and insurance type. Usability of Bridge was assessed via the validated System Usability Scale (SUS; score > 68 is above average). Patients were also asked if: "this tool improved my knowledge of the financial aspects of cancer care and what I can do about it" and "using this app was helpful with my financial concerns." All responses were measured using a 5-point Likert scale. This study was funded on a National Cancer Institute Small Business Technology Transfer grant (R42CA210699).

Results: Thirty patients were enrolled. 36% of patients were male, 73% were white, 97% had high school education or greater, 23% were employed part- or full-time, and 48% had either Medicare or Medicare plus additional insurance. Median annual household income was \$60,500 (mean = \$63,078). The median SUS score was 85 (mean = 84, range = 62.5–100). 83% of patients agreed/strongly agreed that Bridge improved knowledge of the financial aspects of cancer care. 53% of patients agreed/strongly agreed that the app was helpful with financial concerns.

Discussion: Bridge demonstrates high usability and potential to improve patient understanding about financial aspects of cancer care. Interventions such as Bridge could allow for greater dissemination of resources to patients in need, who may not otherwise have the appropriate access or understanding of how to apply for financial assistance.

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F004

6:15 PM-7:15 PM

THE GLEAN RESEARCH STUDY: REDUCING HEALTH DISPARITIES THROUGH INDIGENOUS QUALITY OF LIFE

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According to the Indian Health Services (2017), Alaska Native (AN) and American Indian (AI) people's leading cause of death is cardiovascular disease (CVD) and mortality rates related to CVD are at a ratio of 189.7 to 1.0 for all other races in the nation. Multiple factors contribute to health disparities related to CVD among AN /AI peoples including smoking, physical activity, nontraditional diet, and medication adherence. The aim of the Goodness of Life for Every Alaska Native (GLEAN) study was to mitigate health disparities and target multiple risk behaviors through understanding quality of life (QOL) as it relates to AN adults in the Norton Sound Region of Alaska. A sample of 15 AN adults (6 male, 9 female) with a mean age of 56 was recruited. After a QOL word association activity, participants were asked write words or statements representing their unique QOL on sticky notes and put them on the wall. Participants completed data analysis as a group by discussing and arranging QOL sticky notes into themes. Five focus groups identified the following 9 QOL themes as most salient: family, subsistence, access to resources, health and happiness, traditional knowledge and values, acts of self, providing, sobriety, and healing. QOL themes, namely, access to resources indicate rural health disparities and highlight the need for community based participatory research (CBPR). Baseline data for participants also indicated social and health inequities, such as average income levels significantly lower than the state and national means, high rates of environmental exposure to tobacco, limited physical activity related to health issues, history of high cholesterol and/or blood pressure, and a family history of cancer and/or CVD. Further research will be used to construct a culturally grounded measure of AN adult QOL aimed at targeting and reducing multiple risk behaviors and improving heart health. Additionally, culturally appropriate approaches to determining strengths, values, and indigenous knowledge are a method of mitigating health disparities, increasing disease prevention, and fostering community health promotion.

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F005

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USABILITY TESTING OF VENOUS THROMBOEMBOLISM PROPHYLAXIS TOOL

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Background: Venous thromboembolism (VTE) is a common, preventable hospital acquired event. Northwell Health is launching a system-wide initiative to regulate VTE risk assessment and prophylaxis to reduce VTE events in patients by implementing the Caprini and IMPROVE clinical prediction rules, which have been identified by the Center for Medicare and Medicaid Services as essential components of VTE prevention. Prior to the system-wide implementation, Northwell Health conducted usability testing on the VTE tool prototype to assess provider perceptions and to help facilitate adoption and wide scale usage of the tool.

Methods: This observational study was conducted with 24 healthcare providers (attending, residents, PAs and NPs) across different service lines (gynecology, obstetrics, orthopedics, medicine, neurology and surgery). Participants were given two test cases that mirrored real-world scenarios to assess their likelihood to adopt and use the VTE prototype tool. During each case, participants partook in a think aloud session, verbalizing their decision-making process while interacting with the tool. Following each case, participants completed the system usability scale (SUS) and post task interview. During usability testing all human-computer interactions, including audio and continuous screen capture, were recorded. Participants' comments and interactions with the tool during think aloud sessions and post task interviews were placed into coding categories and then analyzed for generalizable themes by three independent coders.

Results: Of the 26 participants, 50% were female with a mean age of 33.125 (SD 8.237). The average SUS across the different services lines was 72.39 which translates to a C grade. Each participant's comments were grouped into three overarching themes: functionality, visibility/navigation, and content. Several barriers to adoption were identified during this process. They included the need to personalize the workflow for each service line; minimize the number of boxes and clicks; clearly define the risk models for each service line; include additional background and explanation on risk scores; and provide treatment guidelines recommendations for each of the order sets.

Conclusion: An important step towards providing quality healthcare to patients at risk of developing a VTE event is providing user-friendly tools at the point of care. Following usability testing of the VTE prototype tool, we recognized significant opportunities to impact provider behavior and acceptance. The rigor and breadth of this usability testing should increase provider adoption and retention of the VTE tool.

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F006

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USE OF CANNABIS, SUICIDE, AND MENTAL WELL-BEING AMONG THE YOUTH OF TODAY - THE SOLDIERS OF TOMORROW

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Background: In recent years various studies have shown a link between the use of cannabis and reported mental distress, including suicidal thoughts and intent, among youth.^{1,2} Research data from the Israel Anti-Drug and Alcohol Authority found that 11% of teens report using cannabis between the ages of 15–18, a significant increase in the years 2010 to 2017.

Purpose: • Examine the relationship between recreational (non-medical) use of cannabis and suicidal thoughts and behavior.

- Examine the role of mental well-being as a mediator between the use of cannabis and suicidal thoughts and behavior.

- Examine the differences between boys and girls in the usage rates of cannabis and patterns of suicidal thoughts and behavior.

Method: Secondary analysis of the results of the Israeli HBSC survey for 2014, conducted using anonymous self-administered questionnaires in the classroom that include valid and reliable indicators. Target population: Students in grades 10–12 in the public secular and religious schools in Israel.

Sample: A sample of N=5000 based on a national sample by administrative levels by and by grade levels, where the sampling unit is the homeroom class.

Findings: The findings show that nearly 15% of boys and 5% of girls used cannabis at least once in their life. Moreover, about 10% of boys and 4% of girls reported use at least once in the last 30 days. About 11% of the subjects reported suicidal thoughts regardless of gender. Nearly 4% of the boys and 2% of the girls reported at least one suicide attempt in the last 12 months that ended with an injury requiring medical treatment. In the multivariate analysis of subjects who used cannabis at least once compared to those who never used, users were three times more likely to have suicidal thoughts, four times more likely to plan a suicide attempt, and 9.5 times more likely to commit one suicide attempt in the past year. Furthermore, those who reported using cannabis in the last 30 days were five times more likely to have suicidal thoughts, six times more likely to plan a suicide attempt, and 15 times (!) more likely to attempt suicide that ended in injury requiring medical treatment. The findings of the SEM analysis clearly indicate that in both genders cannabis use indeed predicts more mental and physical symptoms and less satisfaction with life.

Conclusions: There is a strong association between cannabis use and suicidal thoughts and behavior among adolescents, above and beyond the association with other variables in the study. In view of the dramatic increase in cannabis use in Israel in recent years, there is a reasonable basis to assume that suicidal thoughts and behavior rates will rise accordingly. Therefore, there is an urgent need to prepare for this eventuality among the youth population as well as soldiers in compulsory military service in the Israel Defense Forces (IDF).

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F007

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EFFECTS OF ILLNESS REPRESENTATIONS OF DIABETES AND HYPERTENSION ON DEPRESSION IN DIABETES CO-MORBID WITH HYPOTENSION PATIENTS

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Background: Diabetes mellitus (DM) is one of the most prevalent and consequential diseases. In China, more than 77% of DM patients co-morbid with hypertension (HT), which shares common causes with DM and self-care is congruent with that for DM. Co-morbidity substantially increase the odds of having depression in DM patients. It was found that illness representation-DM (IR-DM) (i.e., people's beliefs and perceptions about their DM) was useful predictor of depression in DM patients. However, in DM co-morbid with HT patients, whether illness representation-HT (IR-HT) (i.e., people's beliefs and perceptions about their HT) is also important is still unclear.

Objective: to examine: 1) whether IR-DM could explain the variances in depression; 2) whether IR-HT could explain more variances in depression beyond what is accounted for by IR-DM.

Methods: DM co-morbid with HT adult patients (n=524, 63.5% female, Mean_{age} = 64.9 years) were recruited from community health centers in Shanghai, China. IR-DM, IR-HT and depression were measured in a cross-sectional survey. IR-DM and IR-HT were measured in multiple aspects, including identity, consequence, timeline, personal control, treatment control, coherence, concern and emotional response (using Brief Illness Perception Questionnaire).

Results: Hierarchical regression results showed that after adjusting for background variables, IR-DM dimensions significantly explained 20% of variance in depression; specifically, perceptions of more serious consequence ($\beta=0.11$) and negative emotional response ($\beta=0.34$), shorter timeline ($\beta=-0.12$) and less concern about DM ($\beta=-0.11$) were significantly associated with more depression. Beyond IR-DM, the addition of IR-HT dimensions explained more variance in depression ($R^2_{\text{change}} = 0.06, p < 0.001$); *emotional response* ($\beta=0.25$) was significant, moreover, attributing symptoms to DM (i.e., identity, $\beta=0.09$) and timeline ($\beta = -0.08$) were marginally significant associated with depression.

Conclusions: This study for the first time revealed that in addition to IR-DM, IR-HT has additive values in explaining depression in DM co-morbid with HT patients. Interventions targeting on altering patients' representations of DM (i.e., reducing consequence and emotional response, and increasing timeline and concern) as well as their representations of HT (i.e., reducing identity and emotional response, and increasing timeline) can be expected to reduce depression in these patients.

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F008

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CONFLICT ABOUT CONFLICT: DOES FAMILY DISAGREEMENT ABOUT AMOUNT OF CONFLICT RELATE TO OUTCOMES IN PEDIATRIC DIABETES?

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Children with type1 diabetes (T1D) transition from a parent-managed to a self-managed process of diabetes care across pre-adolescence and adolescence. Previous studies have shown significant relationships between parent-patient conflict about T1D self-care activities, glycemic control, and hypoglycemic episodes. This pilot study explored whether disagreement between family members about conflict may represent a stressor additional to the amount of conflict among 242 children (aged 12–15, 52.5% using insulin pumps, 51.2% female, 79.3% Caucasian) with T1D, their mothers, and fathers. That is, do families experience a meta-level of conflict, or conflict about conflict. Mother-Child disagreement (M-Ccon), Father-child disagreement (F-Ccon), and Mother-Father disagreement (M-Fcon), calculated as absolute values in difference scores to represent degree of discordant report of conflict, were entered into hierarchical multiple regressions after conflict scores reported by child/patients (Ccon), mothers (Mcon), and fathers (Fcon), respectively, to test if difference scores accounted for significant additional variance in Glycosulated hemoglobin (HbA1c), Self Care Inventory (SCI) scores, and severity of reported hypoglycemic episodes. Disagreement about conflict accounted for no additional significant variance in HbA1c or in severity of hypoglycemic episodes. M-Ccon ($R^2\Delta=.02$, $p=.038$, Partial $R=.14$) contributed significantly beyond Mcon to prediction of child SCI scores, beyond Ccon ($R^2\Delta=.09$, $p=.001$, Partial $R=-.31$) to prediction of mother's SCI, and beyond Ccon ($R^2\Delta=.06$, $p=.001$, Partial $R=-.27$) to prediction of fathers' SCI. M-Ccon ($R^2\Delta=.022$, $p=.02$, Partial $R=-.21$) and F-Ccon ($R^2\Delta=.02$, $p=.024$, Partial $R=.16$) scores each accounted for significant variance in mothers' SCI report, beyond that accounted for by Fcon. Results suggest that discordant observations and report of diabetes-specific conflict may represent stress and conflict additional to the general amount of conflict that family members report, and discordance between mothers and patients may constitute a "conflict about conflict," relating to self-management behavior, especially as observed by mothers. Implications may involve differences in coping or communication about conflict between mothers and children, and may warrant further investigation.

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F009

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EVALUATING THE RELIABILITY AND VALIDITY OF THE SPANISH VERSION OF THE SF-12 IN HISPANICS

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Purpose: Hispanics in the U.S. often report worse health status and perceive poorer health-related quality of life due to stressors associated with migration, economic hardship, changes in social ties, and cultural differences. Social factors, such as literacy, language, and culture, may influence understanding and interpretation of health-related quality of life in Hispanics. The purpose of this study was to evaluate the reliability and validity of health-related quality of life measure, the Spanish version of the SF-12 v2® among Hispanics with type 2 diabetes and their family members.

Methods: Participants with type 2 diabetes and their family members (N=182) were recruited at clinics, physician offices, and churches in central North Carolina. The data were collected through face-to-face interviews in Spanish from both participants and family members on health-related quality of life measured with the Spanish version of the SF-12 v2®. Reliability and validity were assessed using composite reliability, principal components analysis, and known-groups comparisons.

Results: Reliability of the physical (.82) and mental (.86) component summaries was adequate. Known-groups comparisons revealed lower average health-related quality of life for every subscale of the SF-12 as well as for the two component summaries (PCS $md = -4.06$, $p = 0.001$; MCS $md = -3.76$, $p = 0.021$). Factorial validity was supported for the eight subscale structure but less so for the two component summaries.

Conclusions: The Spanish version of the SF-12 showed good reliability and validity. Health care providers can use the SF-12 to measure health-related quality of life in Hispanics with type 2 diabetes and their family members.

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Key words Spanish version of the SF-12, health-related quality of life, Hispanics, type 2 diabetes, reliability and validity

F010

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BEVACCINATED: DESIGNING A WEB APP TO PROMOTE TEEN VACCINATION UPTAKE

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While vaccination rates for *young* children in the United States currently meet recommended standards, the Centers for Disease Control reports *adolescent* vaccine uptake to be less than optimal, and in the case of the Human Papillomavirus (HPV) vaccine, seriously below desired uptake levels. To address this deficit, a web-browser application prototype, BeVaccinated, was developed to test reactions to and feasibility of delivering adolescent vaccine information via smartphone. The app prototype was developed from formative research with focus group participants (n=26) and guided by an Expert Advisory Board comprised of vaccination experts and clinicians. Usability testing on one module, about deciding to vaccinate, was conducted iteratively with parent and teen pairs in New Mexico (n=9 pairs) and Colorado (n=7 pairs). Pairs were comprised of one teen (ages 13–17; mean age 15) and their accompanying parent or guardian (mean age 47). Teen participants were 56% (n=9) female; 50% (n=16) White; and 31% (n=5) Hispanic. Parents were 88% (n=14) female; 75% (n=12) White; and 6% (n=1) Hispanic. Usability testing was conducted individually with the parent and teen by trained research staff. During the testing, participants used the app prototype, answering questions as prompted. At the conclusion of testing, participants completed the 10-item Bangor System Usability Scale (SUS). Parents rated overall user friendliness of the app 5.5 (range 1–7), and teens rated it 6, indicating the app easy to use. SUS data also indicated participants could quickly learn to use the app (parent score = 4.25; teen score = 4.56 on a 5-point scale) and that they would be confident using it (parent score = 3.88; teen score = 4.31). Evidence suggests that a total SUS score of 40 indicates strong usability. Teens' average score of the app was 43.00 and parents' average score was 42.19. The promising SUS scores and feedback from the EAB indicate feasibility, which dictate plans for Phase II development. A specifications document outlines the planned design of the full-scale app based on testing results. Findings included in the specifications document are: 1) provide tailored learning experiences to teens (i.e., game-based) and parents (i.e., didactic) within the same app; 2) integrate individualized information (e.g. clinic preferences); and 3) provide a vaccination record tracking feature. The planned app could improve dissemination of vaccine information, enhance parent/teen communication around health behavior choices, and ultimately, improve the uptake of vaccinations.

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F011

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AN SBIR INDUSTRY-ACADEMIA PARTNERSHIP IN EVALUATING A HEAD MOUNTED ACTIVITY MONITOR IN SENIORS

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The advent of wearable technology to monitor physical activity has created unprecedented opportunities to observe, quantify, and define physical activity in the real-world setting. Funded by the National Institute on Aging SBIR program, a new standalone communication and monitoring tool (CosmoVue) for older adults was developed by Gen-9 Inc. in collaboration with the Healthy Aging and Technology Solutions Laboratory at Stanford Prevention Research Center. It consists of an accelerometer, gyroscope, GPS, and magnetometer in the form of an ordinary-looking pair of eyeglasses, with an entirely voice-activated interface. CosmosVue can make calls, send messages, call 911 if the user needs help, monitor activity and heart rate, and track location with onboard GPS.

To evaluate CosmosVue user acceptance, participants aged ≥65 years were recruited from existing clinical trials, local community centers and websites. The user acceptance study was completed in two segments. Segment I involved an in-clinic user evaluation where participants were supplied with the preproduction CosmosVue eyeglasses. Individually-structured interviews, usability surveys and cognitive and behavioral walk-throughs of the product and its components were conducted. Participants then completed a usability survey and Short Physical Performance Battery in a clinically supervised space. Segment II involves an at-home user evaluation of the CosmosVue eyeglasses, where participants use CosmosVue for seven days, keep a detailed diary of their daily activities, and answer a post-usability survey.

Currently, 30 participants have completed Segment I, and 2 have completed Segment II. The average age of Segment I participants was 76.4, with a roughly 1:1 male to female ratio. Participants' racial and ethnic backgrounds included 60.0% White, 20.0% Hispanic, 16.7% Asian and 3.3% American Indian. More than 80% of the participants had completed some college or above, perceived having good health, and did not use assistive devices. More than 78% of participants wore everyday glasses; 61% responded that they had no caregivers or others checking in with them regularly, and 73% own smartphones and tablets.

Participants in Segment I reported the CosmosVue eyeglasses were comfortable to wear (96.7%), perceived the device to be easy to use and with appropriate functions (100%), and believed that they would benefit from wearing the device (90.4%). The majority of participants (73.2%) reported that wearing the device would not be distracting. Participants also indicated that the device still needs improvements, particularly in terms of battery life and consistency of the voice-activated interface. Overall, participant feedback thus far indicates that CosmosVue may be an attractive hands-free approach for monitoring older adults' activity levels and promoting their safety in home and community environments.

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F012

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DEVELOPMENT OF BEHAVIORAL JOURNALISM NEWSLETTERS TO ADDRESS COLORECTAL CANCER SCREENING BARRIERS

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Introduction: In Puerto Rico (PR), colorectal cancer (CRC) is a leading cause of death due to cancer. Colorectal cancer screening (CRCS) can reduce both, the incidence and mortality of CRC through early detection. Data from the 2017 Behavioral Risk Factor Surveillance System, indicates that only 17.8% of the PR population 50+ years has undergone a fecal occult blood testing (FIT/FOBT) within the past year. Additionally, only 50.6% of age-eligible Puerto Ricans report ever having a sigmoidoscopy or colonoscopy. These screening rates are substantially lower than the goal targeted by the National Colorectal Cancer Roundtable which aims to achieve 80% screening rate by 2018. The Guide to Community Preventive Services recommends “one-on-one” education in combination with small media to increase CRCS. Currently, there are few studies examining “one-on-one” education in combination with other communication strategies in the Latino population and none with Puerto Ricans. Using intervention mapping, we designed a newsletter to increase CRCS in Puerto Ricans.

Objective: Develop a behavioral journalism newsletter to address barriers related with CRCS aimed to increase uptakes among men and women 50 years and older in Puerto Rico.

Methods: We developed a newsletter following intervention mapping steps, and using behavioral journalism techniques. We conducted ten in-depth journalistic style interviews with participants who had completed CRCS and had characteristics similar to those of our target population that included specific questions related with barriers related with CRCS and asked about how they felt about the outcomes of screening. We included both individuals who were up-to-date with screenings, or who had survived CRC because completion of the CRCS tests. During the interviews, we used open-ended questions to obtain quotes and keywords from participants to be incorporated into the newsletter. We used these to create stories about the benefits of CRCS and about how these individuals had overcome barriers to receive screening and protect their health.

Results: We conducted focus groups (N=19) and administrated a survey to test the appeal, acceptability, perceived relevance, cultural appropriateness, and motivation to obtain a CRCS of the newsletter. Overall, participants found this educational component to be both attractive and culturally sensitive. We found that Behavioral Journalism was an overarching effective method relevant for addressing the identified personal determinants and environmental factors (barriers for CRCS). This method which is aimed at changing social norms is particularly effective in reaching audiences that may have low literacy, or who are initially unwilling to process the message.

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F013

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MECHANISMS OF CHANGE IN A MOTIVATIONAL INTERVIEWING BASED INTERVENTION TO PROMOTE USE OF MULTIPLE SCLEROSIS (MS) MEDICATIONS

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Background: Despite the demonstrated efficacy of disease modifying therapies, (DMT) many MS patients (~ 40%) stop using DMT within 3 years of starting. A cross-over randomized controlled trial demonstrated that a theoretically based Motivational Interviewing- Cognitive Behavior Therapy (MI-CBT) intervention increased DMT re-initiation among relapsing-remitting MS patients compared to a treatment as usual condition.

Purpose: We explored the mechanisms of action responsible for the effectiveness of the MI-CBT intervention. Preliminary mediation analyses were used to examine whether theorized mediator variables (autonomous regulation, personal and treatment control, and motivation and confidence to re-initiate) were impacted by the intervention and whether changes in these variables were related to DMT re-initiation.

Method: Following baseline assessment, participants (N=81; 86.4% female) were randomly assigned to receive either five sessions of MI-CBT or to treatment as usual with brief education. Potential mediators (Autonomous Regulation, Personal Control, Treatment Control, two measures of Motivation to re-initiate, and Confidence to re-initiate) were assessed at end of treatment (week 10) using established measures. Pearson correlations were used to examine associations between treatment group and changes in mediator variables and between changes in mediator variables and outcome (re-initiation) at week 10.

Results: Treatment group was significantly related to both measures of change in Motivation ($r=.32, p=.01$) and re-initiation ($r=.22, p=.04$). No significant relationships were found between Treatment group and changes in Autonomous Regulation, Personal Control, Treatment Control or Confidence to re-initiate (all $p's>.05$). Change in Autonomous Regulation ($r=.25, p=.03$), and both measures of change in Motivation ($r=.33, p's>.05$) related to re-initiation.

Discussion: Enhanced understanding of treatment mechanisms can lead to improved interventions and refined theories of behavior change. Preliminary mediation analyses suggest that the MI-CBT intervention may have increased re-initiation relative to treatment as usual by increasing autonomous regulation and motivation but not through changes in personal control, treatment control or confidence.

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F014

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CSC ONDEMAND: A NOVEL TRAINING AND IMPLEMENTATION PACKAGE TO SUPPORT COORDINATED SPECIALTY CARE (CSC) TEAMS

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Schizophrenia is a potentially devastating illness that typically begins in adolescence and young adulthood. Early intervention may reduce or eliminate the recurrent exacerbations and functional impairment that can occur with this disease. A growing body of research has found that comprehensive, team-based, multi-disciplinary services provided by CSC teams early in the course of the illness can improve outcomes. For example, the National Institute of Mental Health (NIMH) Recovery After an Initial Schizophrenia Episode (RAISE) projects demonstrated that multi-element, multi-disciplinary interventions improved outcomes in occupational and social functioning, symptoms, and quality of life. As widespread dissemination of CSC programs begins, there is a need for training in evidence-based practices to deliver services to individuals with early psychosis.

Through a Fast-Track Small Business Innovation Research (SBIR) grant from NIMH, the Center for Social Innovation (C4) partnered with expert faculty to develop and evaluate *CSC OnDemand: An Innovative Online Learning Platform for Implementing Coordinated Specialty Care*. This novel training and implementation package supports CSC teams by providing basic training, role-specific content, peer learning, and ongoing access to resources and materials. Using C4's *Omega Courseware*, the package integrates text, videos, audio clips, interactivity, and links to external resources. Expert faculty led live video learning sessions with case discussions that deepen team learning and development.

In a Phase I pilot study, we tested the *CSC OnDemand* prototype, assessing feasibility, acceptability, and preliminary effectiveness among three teams of providers serving individuals with first episode psychosis. A quantitative survey administered pre- and post- intervention assessed knowledge acquisition and a mixed-methods approach assessed participant feedback on feasibility and acceptability of the tool. Results showed high feasibility with 100% of participants using the tool and joining the live sessions. Participants reported high satisfaction and indicated ease of use and early application of skills to practice. There was a statistically significant improvement in knowledge of CSC and first episode psychosis. Findings demonstrate the value of *CSC OnDemand* as a learning tool for providers and agencies serving individuals with early psychosis and support the transition to a Phase II randomized clinical effectiveness trial.

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F015

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FIELD EVIDENCE OF SYNERGY BETWEEN EXECUTIVE CONTROL AND REWARD SENSITIVITY IN WEIGHT MANAGEMENT

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Obesity and other problems associated with modern diet have been qualified as neurobehavioral diseases. They are tied to a misalignment between the capacity of the dopamine brain systems to support normative behavior and the current environment that differs dramatically from what mankind evolved. However, research has shown that individual differences exist in the dopamine systems that modulate one's behavior and body weight (as indexed by BMI) in the modern obesogenic environment. Differences have been found in neuroimaging, neuro-cognitive task and personality studies for both executive control (EC) and reward sensitivity (RS), two key dopaminergic endophenotypes. The bulk of past research have seen executive control and reward sensitivity as competitive processes with zero-sum-game outcomes, with the immediacy of reward-seeking to account for the high rate of obesity. This field study aims to explore how one's personality on executive control and reward sensitivity interact. The EC was indexed by the sense of control scale (Mirowsky & Ross, 1991) and the RS was assessed by Behavioral Activation System reward responsiveness scale (Carver & White, 1994). The sample consists 620 adults who engaged in the Montreal Neighborhood Networks and Healthy Aging Panel in 2008 and 2010 (Moore, Buckeridge & Dubé, 2014). The dependent variable is the difference of ones' BMI in two years. Linear regression analysis controlling for socio-demographic and socio-economic conditions were performed. High EC was associated with less weight gain ($p=0.02$), whereas no main effect of RS emerged. The interaction of EC and RS is negatively significant ($p<0.001$). For people with a low control level, those with high RS gain more weight as expected. For those with a high control level, people with low RS gain slightly more weight. Turning to the other component, for people with high RS, those with low control gain more weight. Surprisingly, for people with low RS, those with high control gain more weight. Results are discussed in terms of possible mechanisms for future experimental work, namely, reward deficiency syndrome (RDS) and emotion regulation. The RDS theory states that people insensitive to reward take palatable food as self-medication to improve mood. This theory didn't apply to individuals with low EC because they are reluctant to take actions and may stay depressed as studies have shown that low executive control is highly correlated with depression.

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F016

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EFFICACY OF A WEARABLE-ENABLED PHYSICAL ACTIVITY COUNSELLING PROGRAM FOR PEOPLE WITH KNEE OSTEOARTHRITIS

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Background: Current guidelines emphasize an active lifestyle in the management of knee osteoarthritis (OA), but up to 90% of OA patients are inactive. This study aimed to assess the efficacy of a wearable-enabled physical activity counselling program for improving activity participation and disease status in people with knee OA.

Methods: Eligible participants had a self-reported knee OA diagnosis, or symptoms of knee OA based on a validated questionnaire. After baseline assessment and randomization, the *Immediate Intervention Group (II)* received group education, a Fitbit, and 4 biweekly phone calls by a physiotherapist to counsel activity goals over a 2-month period. The *Delayed Intervention (DI) Group* received the program 2 months later. Participants were assessed at baseline (T0) and the end of 2, 4 and 6 months (T1, 2, and 3). Outcome measures included: 1) mean moderate/vigorous physical activity (MVPA) time measured with a SenseWear® monitor; 2) mean daily step count; 3) mean sedentary behaviour time; 4) Knee Injury & OA Outcome Score (KOOS). Analysis of covariance (ANCOVA) was used to evaluate the effect of the group type on the outcome measures at T1, 2, and 3, after adjusting for T0. We assessed three planned contrasts of changes: 1) compared T0–T1 between the two groups to determine if *II* was superior to *DI* (the control); 2) compared T0–T2 in *II* against T0–T3 in *DI*; 3) compared T0–T2 in *II* against T1–T3 in the *DI*. The last 2 models assessed whether the two-month delay had an impact on the effect of the intervention.

Results: In 2015–2016, we recruited 61 participants (*II*: n=30, 73% women; *DI*: n=31, 90% women). Both groups were similar in age (*II*: 61.3 (9.4) years; *DI*: 62.1 (SD 8.5)), body mass index [*II*: 29.2 (5.5); *DI*: 29.2 (4.8)], and baseline MVPA time [*II*: 62.1 (54.6) minutes; *DI*: 65.3 (77.4)]. Mean MVPA minutes at T1, 2 and 3 for the *II* group were 75.5 (54.3), 62.6 (56.3) and 65.6 (48.5), respectively. A trend of decrease in MVPA time was found in the *DI* group at T1 [49.6 (46.8)], but improved at T2 [60.1 (76.8)] and T3 [70.7 (71.9)]. Pre-specified contrast analyses revealed a significant effect whereby the *II* group improved in the MVPA time at T0–T1 compared to the *DI* (contrast coefficient: 25.2; 95% CI 5.5, 44.9; $p = 0.01$). A significant effect was also found in the mean daily steps at T0–T1 (contrast coefficient: 1519.3; 95% CI 256.2, 2782.3; $p = 0.02$). We found no significant effect in any outcome measures in the other contrast analyses.

Conclusion: Our wearable-enabled counselling program improved MVPA and step counts in people with a diagnosis or symptoms of knee OA. The finding is important since an active lifestyle is recognized as an important component of successful self-management.

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F017

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ENGAGEMENT WITH CLIENTS ACROSS CULTURAL AND RACIAL DIVIDES: TOWARDS AN EVIDENCED-BASED TOOL FOR ADDRESSING STRUCTURAL RACISM

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In 2018, delivery of mental health services to different race children and their families remains a challenge to counselors, psychologists, psychiatrists, and social workers. Race-based traumatic stress and oppression including discrimination and racial microaggressions, are receiving increasing recognition resulting in adverse mental health outcomes (American Psychological Association, 2016; Carter, 2007). The impact of structural racism, resulting in race-based community violence and racial health inequities, such as high rates of infant mortality, requires a response at every level of society (Author). New clinical tools are needed to engage and deliver equitable services in many community-based mental health clinic organizations and social service agencies. There is often a racial divide with the administrators and providers, helpers predominately White and the clients ethnic minority predominately Black. The larger issues related to race – stereotyping, discrimination, unconscious bias – become the unacknowledged ‘elephant in the room’ in client-therapist interactions. In this poster, we present the development of a paper and pencil survey instrument titled, *The Perception of the Quality of the Working Relationship (PQWR)* between different-race clients and providers/helpers. Using quantitative and qualitative methods over a two-year period, research was conducted with (N = 248) employees at a large urban, residential psychiatric hospital for children. The results of quantitative and qualitative methods, identified a theme that called for improvement in the relationship dynamics across racial divides. These themes were the basis for were used to create a systematic tool that can be used for on-going assessment of organizational change and accountability. The five sub-sections of the PQWR can be used individually or together to provide quantitative evidence to set goals and assess change for racial issues. Sub-sections include:

Perceptions of group relationships;

Self-report of *individual openness* to topics of diversity;

Ethnic identity;

Emotions related to diversity; and

Knowledge of stereotypes of diverse groups.

This measure has now been used with a group of early childhood practitioners (N = 62) and several class cohorts of social work graduate students (N = 138) to set goals for interpersonal relationships of members with the community clients they serve. Results will present a principal components factor analysis of the measure, reliability of the total and subscales and concurrent validity with standardized measures. I conclude with a discussion of the clinical utility of the PQWR tool for planning for organizational diversity training and future direction for research.

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F018

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DIFFERENTIAL PATTERNS IN ATTITUDES AND SLEEP AMONG A CULTURALLY-DIVERSE PROFESSIONAL SOCCER TEAM

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Background: Sleep is important for optimal athletic performance. Attitudes are salient predictors of behavior and should be considered when developing evidence-based sleep interventions. Our study measured sleep attitudes among professional soccer players to (1) investigate differential patterns by region of origin (culture) and (2) observe relationships between attitudes and self-reported and objective sleep outcomes.

Method: Sixteen male soccer players participated in a sleep evaluation; 8 were from North America (NA) and 8 were from Latin America (LA). They completed demographic and sleep surveys, as well as the Charlotte Attitudes Towards Sleep Scale Peach & Gaultney, 2017), a psychometrically sound measurement tool previously validated in a similar age group. Players wore a FDA-cleared, single-lead ECG device overnight to obtain objective sleep data.

Results: LA players self-reported longer sleep duration than NA players, although 87.5% of LA players reported that they felt “fatigued” or “non-refreshed upon awakening”, as compared to 44% of NA players. ECG data confirmed that 75% of LA players showed a biomarker of sleep instability whereas only 11% of NA players did. Independent sample *t*-tests between groups did not differ in total attitude scores and subscales, however LA players scored significantly lower on the single attitude item “I look forward to a full night of sleep.” Among LA players, the Benefits of Sleep attitudes subscale was associated with longer sleep durations ($r = .63, p = .09$), significantly less unstable sleep ($r = -.72, p < .05$), and significantly less sleep interruptions ($r = -.76, p < .05$). However, among NA players, total sleep attitudes were associated with worse sleep outcomes, including more unstable sleep ($r = .74, p < .05$) and higher sleep interruptions ($r = .73, p < .05$).

Discussion: This study suggests associations between attitudes and sleep outcomes differ by culture. LA players were less likely to look forward to sleep than NA players, which contradicts their longer self-reported sleep duration. Among NA players, attitudes were inversely associated with sleep quality, while favorable sleep attitudes appear advantageous for LA players. Results for NA players are puzzling considering behavior change theories incorporating attitudes (e.g., theory of planned behavior). Such contradictory findings warrant further consideration, and our formative research suggests the need for future investigation into the interplay between attitudes, self-reported sleep characteristics, and objectively measured sleep outcomes in these players.

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F019

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CANCER KNOWLEDGE AND CANCER FATALISM IN THE DEAF COMMUNITY

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Background: The Deaf community is a medically underserved group that faces significant barriers to accessing cancer-related health information, including the fact that they use American Sign Language (ASL) as their primary mode of communication. Cancer fatalism (i.e., the belief that when one has cancer, death is inevitable) and low cancer knowledge are evident among underserved populations, and are associated with low adherence to cancer prevention guidelines. Little research, however, has explored cancer knowledge and fatalism among the Deaf community. The current study describes levels of and explores the relationship between cancer knowledge and cancer fatalism among Deaf adults.

Methods/Approach: Baseline data from three related randomized controlled trials (RCTs) with identical eligibility criteria and methods were analyzed. Deaf adult community participants ($N = 301$) completed ASL versions of a cancer knowledge survey, and the Powe Fatalism Inventory (PFI). For each RCT, average scores for cancer knowledge and cancer fatalism were calculated, and bivariate correlational analyses of total knowledge and PFI scores were conducted to explore the relationship between cancer knowledge and fatalism.

Results: Participants' knowledge scores were on average, for RCT 1: $X = 16.48, SD = 5.67$, range 1–28; for RCT 2, $X = 15.44, SD = 5.22$, range 2–27; and for RCT 3, $X = 14.92, SD = 4.82$, range 3–28. Average scores for the PFI were, for RCT 1: $X = 6.07, SD = 3.32$, range 1–15; for RCT 2, $X = 7.06, SD = 3.39$, range 1–15; and for RCT 3: $X = 6.73, SD = 3.29$, range 1–14. Cancer knowledge and cancer fatalism were found to be significantly negatively associated. Correlations were moderate and significant for RCT 1 ($r = -.445, p < .001$), and weak and significant for RCTs 2 ($r = -.234, p = .022$), and 3 ($r = -.274, p = .007$).

Conclusion: Average scores for cancer knowledge and cancer fatalism were low for Deaf adults across all three RCTs. The current study found that, among Deaf adults, the less cancer knowledge they had, the more fatalistic they were about cancer. A similar negative association between cancer knowledge and fatalism has been found in other underserved groups. Future research is needed to explore additional ways to improve cancer knowledge and fatalism in the Deaf community, as well as the way in which these constructs relate to cancer-related behaviors and outcomes among Deaf individuals.

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F020

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FACTORS ASSOCIATED WITH DENTAL CARE UTILIZATION IN PATIENTS WITH DIABETES IN CENTRAL TEXAS

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Purpose: Patients with diabetes are advised to receive regular dental care because of their high risk of dental caries, early gum disease, and periodontitis related to hyperglycemia. However, the number of patients receiving regular dental checks is low. The aim of the present study was to explore factors associated with dental care utilization in patients with diabetes.

Methods: This is a secondary analysis of 2015 data from 8082 adult patients with diabetes from 14 clinics in a network of Federal Qualified Health Center (FQHCs) that serve low-income patients in central Texas. In addition to descriptive analyses, logistic regression models of dental care utilization were estimated with the following set of predictors: (1) background (ethnicity, gender, and age), (2) number of times blood testing (A1C and lipid panel), and (3) laboratory data (A1C, HDL, LDL, triglycerides, total cholesterol).

Result: Participants were aged 18–97 years (mean age = 53.9, SD = 12.8), 59.8% were female, and 65.9% were Hispanic. Seventy percent of participants had an A1C test an average of 3.3 times; about 74% had lipid panel testing an average of 1.2 times. Only 29.2% of participants used dental care. Increased odds of reporting dental care utilization were observed among individuals aged 18–39 (OR = 1.94, $p < .001$), aged 40–64 (OR = 1.52, $p < .001$), and higher frequency of A1C testing (OR = 1.27, $p < .001$), and lipid panel testing (OR = 1.92, $p < .001$). Being male (OR = .86, $p < .05$) was associated with the reduced likelihood of dental care utilization.

Conclusions: Three variables predicted dental care utilization: patients with higher frequency of blood testing (but not actual blood levels), older participants, and males were less likely to have seen a dentist. These results can direct medical providers to target these groups for counseling and patient education.

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F021

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ASSESSING THE ASSOCIATION BETWEEN SLEEP DISTURBANCES AND COGNITIVE IMPAIRMENT: A PILOT STUDY IN COMMUNITY DWELLING OLDER ADULT

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Background: Sleep disturbances are common in older adults. Little is known about the sleep of cognitively intact older adults and its relationship to subsequent cognitive impairment. The objective of this study was to examine the association between objective sleep-wake measures and risk of incident cognitive impairment.

Methods: Thirty subjects (age = 82.2 ± 6.1 years, body mass index = 25.7 ± 4.8 , female = 43.3%) in 3 age-matched groups, 11 healthy, 10 with amnesic mild cognitive impairment (aMCI), and 9 with Alzheimer disease (AD), were recruited. Subjects wear a chest worn physical activity monitor (PAMSys™, BioSensics, LLC, Watertown, MA) for two days. A validated algorithm for sleep-wake detection based on chest worn sensor was used to calculate the average of sleep parameters, i.e. total sleep time (TST), sleep onset latency (SOL), sleep efficiency (SE), wake after sleep onset (WASO), and number of WASO (nWASO), for the first two nights. The association between sleep parameters and the Montreal cognitive assessment (MoCA) test were explored.

Results: The MoCA test has a significant correlation with the SOL ($r = -0.44$, $p = 0.026$) and the nWASO ($r = -0.412$, $p = 0.037$). The participants stratify into two groups based on the MoCA cut-off of 25 and greater. The SOL (59%, $p = 0.019$) and nWASO (53%, $p = 0.027$), and number of sleep position changes (59%, $p = 0.014$) were significantly lower in the normal group in comparison to cognitive impaired group.

Conclusions: The higher SOL, the higher nWASO, and higher sleep position changes are associated with developing cognitive impairment. Further research with larger sample size is needed to confirm the outcome of this study and reveal the mechanisms underlying these associations.

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F022

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ONLINE SALES OF MARIJUANA: AN UNRECOGNIZED PUBLIC HEALTH DILEMMA

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Introduction: The internet hosts many unregulated marketplaces for otherwise regulated products. If extended to marijuana (or cannabis), online markets can undermine both the U.S. Controlled Substances Act, which bans marijuana sales, and the regulatory regimes of states that have made efforts to legalize marijuana. Consequently, regardless of the regulatory regime, understanding the online marijuana market should be a public health priority. Herein, the scale and growth trajectory of the online marijuana marketplace was assessed for the first time by analyzing aggregate internet searches and the results searchers typically find.

Methods: U.S. Google searches, geotagged by state, including the terms “marijuana,” “weed,” “pot,” or “cannabis” were monitored monthly from 2005–2017 using data obtained from Google. The subset of shopping searches was then monitored by tracking queries that also included “buy,” “shop,” and/or “order” (e.g., “buy marijuana”). Linear regressions were used to compute pooled means to compare between times and log-linear regressions were used to compute average growth.

Second, searches were executed using the twelve combinations of marijuana and shopping root terms (i.e., “buy marijuana”). The first two pages of links, including duplicates (N=279, with 7–12 links per page), were analyzed.

Results: Marijuana searches grew 98% (95%CI, 84–113) as a proportion of all searches from 2005 to the partial 2017 year. The subset of marijuana searches indicative of shopping grew more rapidly over the same period (199%; 95%CI, 165–243), with 1.4–2.4 million marijuana shopping searches during June 2017. Marijuana shopping searches were highest in WA, OR, CO, and NV. The compounding annual growth rate for marijuana shopping searches since 2005 was significantly positive in 42 of the 44 studied locations.

Forty-one percent (95%CI, 35–47) of shopping search results linked to retailers promising mail-order marijuana. Retailers occupied 50% (95%CI, 42–59) of the first page results and for 8 of the 12 searches, the first link led to a mail-order marijuana retailer.

Discussion: Millions of Americans search for marijuana online, and websites where marijuana can be purchased are often the top search result. If even only a fraction of searches and retailers are legitimate, this unregulated online marketplace poses a number of potential public health consequences. Regulations governing online marijuana markets need to be developed and enforced. Policing online regulations will require careful coordination across jurisdictions at the local, state, and federal level with agreements on how to implement regulations with conflicting enforcement regimes.

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F023

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ADHERENCE TO THE AMERICAN CANCER SOCIETY GUIDELINES FOR CANCER PREVENTION AMONG WOMEN AT HIGH RISK OF DEVELOPING BREAST CANCER

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BACKGROUND: Adherence to the American Cancer Society (ACS) guidelines for cancer prevention has been shown to lower the incidence of breast cancer among average risk women. The majority of average risk women do not adhere to the ACS guidelines. There is limited evidence on the frequency of adherence to the ACS guidelines among high risk women.

PURPOSE: We aimed to examine adherence to the ACS guidelines for cancer prevention with a focus on body mass index (BMI), physical activity (PA), alcohol intake, tobacco, and sitting time among 2,074 high risk women enrolled in the MD Anderson High Risk Breast Cohort Study.

METHODS: At baseline, the participants completed self-administered questionnaires that collected information on age, race/ethnicity, marital status, socioeconomic factors (e.g. education and employment status), and five lifestyle factors (e.g. PA, tobacco, BMI, alcohol intake, and sitting time). High risk women were defined as having a diagnosis or history of one of the five characteristics: ductal invasive carcinoma (DCIS), lobular carcinoma in situ (LCIS), lifetime risk based on these models (Gail+Clau+Couch+Tyler-Cuzick), mantle radiation, or mutation. Logistic regression analyses were used to estimate odds ratios (OR) and 95% confidence intervals (CI) for the association of baseline characteristics and adherence to the ACS guidelines for cancer prevention. Adherence to five ACS guidelines were analyzed via descriptive statistics.

RESULTS: The majority of the cohort were white (78.5%), married (77.8%), and over 55 years (63.6%). Overall, more than half of the cohort met the recommendations for tobacco (69.5%) and alcohol (56.6%) but less than half met the recommendations for PA (27.6%) and BMI (37.6%). Compared to white women, non-Hispanic black (OR=0.09; 95% CI: 0.04–0.19) and Hispanic women (OR=0.59; 95% CI= 0.40–0.87) were less likely to meet the BMI recommendations but were statistically significantly more likely to meet the alcohol and tobacco recommendations. Older age (over 45 years) was statistically significantly associated with nonadherence to the sitting time recommendation. Compared to women with a high school degree, women with some college education (OR=2.17; 95% CI: 1.52–3.08) were more likely to meet the BMI recommendations.

CONCLUSIONS/IMPLICATIONS: The frequency of adherence to the BMI and PA recommendations among this cohort population is relatively low. Future studies should target these low areas of adherence and develop weight loss and PA interventions to reduce the incidence of breast cancer among high risk women.

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F024

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NO DIFFERENCES FOUND IN LUNG CANCER SCREENING AND AWARENESS AMONG APPALACHIANS COMPARED TO NON-APPALACHIANS

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Background: Appalachian residents experience greater cancer disparities compared to their non-Appalachian counterparts. Specifically, lung cancer incidence and mortality rates are higher in Appalachia compared to the national average. Lung cancer screening may help reduce cancer mortality, but little is known about lung cancer screening and awareness and how it differs among Appalachians and non-Appalachians.

Objective: To examine lung cancer screening and awareness among Appalachian adults vs. non-Appalachian adults, along with related sociodemographic characteristics, in a nationally representative US sample.

Methods: Data from two waves of the Health Information National Trends Survey, a population-based survey collected from 2012–2014, were combined (N = 7307). Descriptive analyses examined sociodemographic variables and lung cancer screening eligibility, as well as lung cancer screening and awareness among Appalachians and non-Appalachians. Individuals were asked whether they had talked with their provider about having a test to check for lung cancer or heard of any tests to find lung cancer. Separate weighted multivariable analyses were conducted to examine lung cancer screening and awareness, controlling for sociodemographics.

Results: Approximately 8% of the sample resided in Appalachia (n=490). We found statistically significant differences for race, general health status, educational attainment, income, and urban/rural status for Appalachians compared to non-Appalachians. There was a statistically significant difference in those eligible for lung cancer screening (age 55–80 and current smokers) among Appalachians (6.1%) compared to non-Appalachians (3.6%) (p=0.001). However, there were no statistically significant differences for talking to a doctor about lung cancer screening (p=0.50) or for hearing about any tests to find lung cancer (p=0.81) among Appalachians compared to non-Appalachians in both bivariate and multivariable analyses.

Conclusions: Consistent with previous research, Appalachians had lower levels of educational attainment and income, and were more likely to report poor health than non-Appalachians. However, no differences in lung cancer screening and awareness were observed. Appalachian communities may be targeted for lung cancer screening services and/or rural programs are doing more outreach to providers. More research is needed to understand these null results despite higher lung cancer burden among Appalachians.

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F025

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POST-SURGICAL PHYSICAL ACTIVITY ASSESSMENT OF ENDOMETRIAL AND OVARIAN CANCER PATIENTS

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Background Physical activity is a key determinant of health and exercise can be an effective for decreasing anxiety and depression and improving quality of life in cancer survivors. However, little is known about the trajectory of physical activity after surgical intervention. The primary aim of this study was to report the trajectory of physical activity over time for post-operative gynecologic cancer patients. The secondary aim was to identify correlates of total physical activity over time.

Methods The study population was patients who underwent surgery for endometrial (n=80) or ovarian cancer (n=43) and wore an accelerometer for a 3-day period 1 week, 1 month and 4 months after surgery. Accelerometer data were captured during all waking hours and were transformed using counts per epoch into categories of light, moderate and vigorous intensity physical activity. The outcome of interest was total minutes of moderate to vigorous intensity physical activity (MVPA) at each time point analyzed using a linear mixed effect model approach, adjusted for age, body mass index (BMI), self-rated health, open surgery vs. laparoscopic (endometrial only) and chemotherapy yes/no (ovarian only).

Results Mean age was 58.8 ± 10.1 years with mean BMI of 35.5 ± 10.3 kg/m². At 1-week post-surgery, patients averaged 7 ± 12 minutes at 1 week, 20 ± 41 minutes of MVPA at 1 month, and 25 ± 36 minutes at 4 months post-surgery (p = 0.01). Federal physical activity guidelines recommend approximately 70 minutes of moderate intensity activity over a three-day period in order to collect 150 minutes of moderate intensity activity a week. Total accumulated MVPA during the wear period increased over time (p=0.01), and better self-rated health at baseline was associated with increased physical activity over time (p=0.02). Other clinical predictors such as BMI, age, type of surgery or use of neoadjuvant chemotherapy did not predict physical activity in patients of either disease site.

Conclusion Physical activity increased over time for endometrial and ovarian cancer patients, yet overall physical was modest. Self-reported health at baseline was positively associated with increased moderate-vigorous physical activity over time. There is insufficient evidence to show that BMI significantly contributes to changes in moderate-to-vigorous physical activity over time. Future research should address barriers to activity and novel interventions to increase activity for post-surgical cancer patients.

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F026

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RELATIONSHIP BETWEEN POST-SURGICAL DISENGAGEMENT COPING AND DEPRESSIVE SYMPTOMS IN NON-METASTATIC BREAST CANCER SURVIVORS

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Introduction: Psychosocial factors such as coping may influence the course of treatment-related physical and psychological sequelae among breast cancer (BCa) survivors. Disengagement coping in particular, may be relevant to the symptom experience. Classification of coping responses into a higher order category of disengagement coping remains ambiguous, and evidence on the role of disengagement coping in the trajectory of physical and psychological symptoms in BCa survivors is inconsistent. This study aimed to test a mediation model elucidating a longitudinal relationship between a latent construct of disengagement coping at the time of diagnosis and depressive symptoms 5 years later, via pain and fatigue interference during the initial 12-month period of primary treatment for BCa.

Method: Stage 0-III BCa patients (N=240) were recruited 4 to 10 weeks post-surgery and completed a baseline (T1) questionnaire measuring coping responses, pain, fatigue, and depressive symptoms. Women were reassessed 6-months (T2), 12-months (T3), and 5-years post-surgery (T5). Using Mplus, a single factor confirmatory factor analysis was conducted to investigate whether several coping scales share a common variance indicative of disengagement coping. Structural equation modeling was used to test the proposed mediation model.

Results: A measurement model consisting of behavioral disengagement, denial, self-blame, and self-distraction exhibited good model fit ($\chi^2(2)=3.50$, $p=.17$; RMSEA=.06 (90% CI=[.00, .15]); CFI=.98; SRMR=0.03), suggesting that these coping strategies may constitute a higher order category of disengagement coping. Results from structural equation modeling did not reveal direct effects relating the latent construct of disengagement coping at T1 with long-term depressive symptoms at T5, or with pain and fatigue interference at T3. There was also no evidence to suggest mediation between T1 disengagement coping and T5 depressive symptoms via T3 pain and fatigue interference.

Conclusions: These findings further characterize disengagement coping and clarify its influence (or lack thereof) on physical and psychological symptoms throughout the BCa experience. Alternative mediation models, examining disengagement coping as the mediator, should be explored to facilitate the development of psychosocial interventions that target coping strategies affecting the physical and mental health of long-term BCa survivors.

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F027

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VARIANCE IN PERCEIVED COGNITION: PERCEIVED COGNITIVE DIFFICULTIES IN CANCER DISEASE TYPES AS A RESULT OF MEDICAL INTERVENTION

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Introduction Previous research efforts have confirmed that cancer patients in varying capacity can experience declines in cognitive ability as a result of receiving chemotherapy. There are a multitude of cancer treating agents that each correspond with different types of cancer. The current study aims to observe the relationship between self-reported cognitive function and medical intervention received. **Methods** Data was collected from 176 patients who completed intake at a cancer facility between February 2016 and June 2017. During screening, patients completed the 8-item short form of perceived cognitive difficulties on the Patient-Reported Outcomes Measurement Information System (PROMIS), which consist of self-report measures that evaluate physical, mental, and social health. Individual scores for perceived cognition range from 8 to 40, with higher scores indicative of greater impairment. An independent sample T-Test was utilized to determine the associations between (1) level of self-reported cognition and (2) if chemotherapy was received. In addition, a One-Way ANOVA was completed to assess the relationship between (1) level of perceived cognition and (2) number of treatment modalities received. **Results** Patients' raw mean reported cognition was 20.8 (9.4). The analysis showed no statistical significance between perceived cognition and if chemotherapy was received; $t(173) = .716, p = .475$. The relationship between number of treatment modalities (e.g., chemotherapy, radiation, etc.) and perceived cognition was also examined. A One-way ANOVA found that there were no differences between perceived cognition and number of treatment modalities received by patients; $F(3,172) = .357, p = .784$. **Discussion** These results indicate that modality used to treat cancer in the study did not predict the patients' perceived level of cognition. This is contrary to the results produced in other studies. Further research could assess the association of type of cancer and other self-reported measures, such as fatigue, anxiety, or depression. Medical professionals may look to gathering self-reported conditions in an effort to create a baseline for the patient and be aware of changes that may occur during treatment.

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F028

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LESSONS LEARNED FROM A MOTIVATIONAL INTERVIEWING BASED INTERVENTION FOR PATIENTS IN CARDIAC REHABILITATION

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Cardiac rehabilitation (CR) is extremely effective in decreasing rates of cardiac-related morbidity and mortality, but participation rates are relatively low. Multiple interventions for increasing participation have been conducted, but there is limited research on their efficacy for low socioeconomic status (SES) populations. The current study tested the effectiveness and feasibility of an intervention aimed at increasing CR participation in low SES patients with cardiovascular disease (CVD).

CR eligible patients ($N = 30$) were recruited from an urban safety net hospital and randomized into a standard of care control group ($n = 15$) or intervention group ($n = 15$). The mean age of the sample was 56 years ($SD = 7.06$). Most participants were male (68%) and European-American (67%). The intervention group received standard of care, plus a brief educational video shown before hospital discharge and a brief telephone-based Motivational Interviewing counseling session one-week post-hospital discharge; both components focused on how to overcome common barriers to CR participation. The intervention group completed items measuring satisfaction with the video, the counseling session, and the counselor five weeks post-hospital discharge. The primary outcome was CR participation at five weeks post-hospital discharge.

The groups were equivalent on baseline demographic, social, and clinical variables (e.g., perceived stress, depressive symptoms, and CVD diagnoses). Contrary to predictions, there were no significant differences between the two groups in CR participation. In addition, participants in the intervention group endorsed significantly more depressive symptoms ($M = 11.79$) than the control group ($M = 4.73$) five weeks post-discharge, $t(27) = -3.76, p = .001$. Despite the intervention not having a significant effect on CR participation, the intervention group expressed high levels of satisfaction with the CR video and counseling session, as well as good working alliances with the counselor and high levels of perceived autonomy support.

These findings offer important lessons for treating low SES patients with CVD. First, satisfaction with a CR intervention does not necessarily translate into CR participation. Second, structural and psychosocial barriers may prevent interested patients from participating in CR programs. Specifically, depressive symptoms may represent a powerful barrier that requires robust screening and treatment efforts by CVD practitioners.

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F029

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AEROBIC EXERCISE TRAINING AND INDUCIBLE INFLAMMATION: RESULTS OF A RANDOMIZED CONTROLLED TRIAL IN HEALTHY, YOUNG ADULTS

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Background: Aerobic exercise is recommended regularly by consensus panels for its health promoting effects. Many studies, both observational and interventional, suggest that aerobic exercise training has anti-inflammatory effects but many show no effect of training. This significant variation in findings from these studies may be related to differences in study participants, details of the clinical intervention, accumulation of sample, choice and preparation of inflammatory markers, and statistical analysis approaches. This variability makes an unequivocal determination of the nature of anti-inflammatory effects of aerobic exercise training elusive.

Methods: 119 healthy, sedentary young (age 20–45 years) adults were randomized to either 12 weeks of aerobic exercise training or a wait list control condition followed by 4 weeks of sedentary deconditioning. Inducible TNF α and IL-6 by lipopolysaccharide ((LPS) 0.0, 0.1, and 1.0 ng/ml) and toll-receptor 4 (TLR4) as well as aerobic capacity established by cardiopulmonary exercise testing (CPET) were measured at study entry (T1), after training (T2), and after deconditioning (T3). Participants wore Polar heart rate monitors during training to confirm that they exercised at their target heart rate.

Results: The aerobic training group achieved a significantly greater improvement in aerobic capacity on average by 5 ml/kg/min ($t_{85}=7.0$, p release at T2 (LPS 0.0 ng/ml: $t_{88}=0.5$, $p=.62$; LPS 0.1 ng/ml: $t_{93}=1.6$, $p=.12$; LPS 1.0 ng/ml: $t_{92}=1.3$, $p=.19$). Similarly, there was no significant effect of the intervention on inducible IL-6 release (LPS 0.0 ng/ml: $t_{85}=-0.4$, $p=.69$; LPS 0.1 ng/ml: $t_{93}=1.0$, $p=.31$; LPS 1.0 ng/ml: $t_{92}=1.1$, $p=.29$). Additional analyses revealed a differential longitudinal treatment effect by LPS level of LPS stimulation (dichotomized at LPS 0.0 ng/ml vs. LPS 0.1 ng/ml, LPS 1.0 ng/ml) in inducible TNF α ($F_{1,469}=3.7$, $p=.07$) and IL-6 ($F_{1,466}=6.3$, $p=.01$). Post-hoc comparisons showed increases from T1 to T2, rather than decreases, in inducible (LPS 0.1 ng/ml and LPS 1.0 ng/ml) TNF α (estimated percent change 51%, $p=.04$) and IL-6 (estimated percent change 42%, $p=.11$). No significant changes were seen in either the training or waitlist groups for inducible (LPS 0.0 ng/ml) TNF α and IL-6. Training elicited no change in TLR4.

Conclusions: The failure to support the primary hypotheses and the unexpected post-hoc findings of a potential exercise-training-induced proinflammatory response raise questions about whether and under what conditions exercise training has anti-inflammatory effects.

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EQUAL DIET QUALITY BETWEEN TWO MOBILE DIET TRACKING DEVICES IN THE DIET MOBILE STUDY: A REMOTELY-DELIVERED WEIGHT LOSS STUDY

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Background: Dietary self-monitoring is the cornerstone of behavioral obesity treatment. Mobile health technology has the potential to change dietary intake, which can have significant public health improvements. Compared to examining individual nutrients, diet quality captures the overall pattern of eating. The objective of this study was to examine differences in energy intake and diet quality between individuals using a wearable Bite Counter (Bite) or a mobile app (App).

Methods: A cross-sectional analysis of the DIET Mobile study was conducted. The DIET Mobile study was a 6-month randomized weight loss trial comparing the Bite to App group. The Bite group used the Bite Counter, a wearable device that uses micro-electro-mechanical gyroscope technology to track wrist motion, automatically detecting bites. The App group used FatSecret, a free traditional diet app. Data from overweight adults ($n=81$, mean BMI=34.7 \pm 5.6 kg/m², 81.5% White, 82.7% female), who owned smartphones, and had stable health conditions were analyzed from the remotely-delivered intervention. Participants completed 2 ASA24 diet recalls at baseline, 3-months, and 6-months. Changes in diet quality, assessed by Healthy Eating Index (HEI)-2010 scores (max=100), were compared at baseline, 3-months, and 6-months. Repeated measures ANOVA models were used to assess changes in HEI scores and diet components between groups from baseline to 3- and 6-months. Models included time, group, and group x time interaction. The models use Full Information Maximum Likelihood estimation with robust standard errors to utilize all available data when attrition is present.

Results: Changes in HEI scores from baseline did not differ between the App and Bite groups at either 3- (App: 6.1 \pm 2.6 points, Bite: 2.7 \pm 2.7; $P=0.36$) or 6-months (App: 5.9 \pm 2.7 points, Bite: 3.9 \pm 2.9; $P=0.62$). Examining within-group changes, the App group significantly improved their HEI score at both 3- ($P=0.02$) and 6-months ($P=0.03$), while the Bite group did not. Changes in reported energy intake (kcal/day) did not differ by group at 3- (App: -807.2 \pm 119.3 kcal, Bite: -498.0 \pm 128.1; $P=0.08$) or 6-months (App: -641.5 \pm 127.9 kcal, Bite: -507.6 \pm 135.2; $P=0.47$); however, both the App and Bite groups significantly decreased their energy intake at 3- (both $P < 0.001$) and 6-months (both $P < 0.001$) respectively, when examining within-group changes.

Conclusions: Future interventions should examine ways to target and improve diet quality through mHealth technology.

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F031

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THE NEWEST VITAL SIGN: MEASURE OF HEALTH LITERACY AND WEIGHT-RELATED BEHAVIORS IN INDIVIDUALS WITH FOOD INSECURITY

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Introduction: Health literacy is the ability to understand basic health information and to make informed health decisions. The purpose of the current study was to examine the relationship between health literacy and weight-related health behaviors in individuals living with food insecurity, a population at significantly elevated risk for overweight/obesity and associated health problems. Very few studies have examined this relationship, and to the best of our knowledge, no studies have examined the association between scores on the Newest Vital Sign (NVS), a measure of health literacy, and weight-related health behaviors in a low-income sample.

Methods: 47 food-insecure participants (73.9% male, 57.4% non-white, 66.6% overweight/obese) indicated their current weight and height and filled out a battery of self-report measures, including the NVS, the Dutch Eating Behaviors Questionnaires (DEBQ), the Binge Eating Scale (BES, $\alpha = .89$) and the Eating Attitudes Test (EAT-26, $\alpha = .84$). Other diet-related behaviors that were assessed included frequency of cooking, eating out, and grocery shopping.

Results: The NVS showed good internal consistency (Cronbach's $\alpha = .74$). The average number of correct items on the NVS (ranging from 0 to 6) was 1.38 ± 1.62 with 83% ($n=39$) of participants scoring $r = .35$, $pr = .08$, $p = .58$). Furthermore, there were no significant associations between NVS scores and DEBQ subscale scores, BES and EAT-26 total scores, or other diet-related behaviors such as frequency of cooking, eating-out, and grocery shopping (all uni- and multivariate $p > .05$).

Conclusion: Previous research has found that NVS scores are not associated with better health outcomes (Osborne et al., 2007; Gordon, Singh and Aiken, 2017). These results expand upon existing research by showing that health literacy is not associated with health or diet-related behaviors in a food insecure sample. While the NVS demonstrated good internal consistency and convergent validity, the lack of significant associations between NVS scores and diet- and weight-related behaviors suggest that nutrition psychoeducation may not be a useful target for interventions. Instead, behaviorally-based interventions may be more effective in promoting positive health outcomes.

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F032

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CHANGES IN ABSOLUTE AND RELATIVE ENERGY INTAKE IN MEN AND WOMEN DURING A 9-MONTH RESISTANCE TRAINING TRIAL

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INTRODUCTION: We observed energy intake (EI) in previously sedentary adults completing resistance training (RT) or non-exercise control 3 days/wk over 9 months to determine if this exercise modality may induce dietary compensation for physical activity.

METHODS: 168 normal weight or obese sedentary young adults (18–30 yrs.; 50% female) completed a 9-month trial using either 1 ($n=40$; 19 females) or 3 ($n=39$; 20 females) sets of RT or served as non-exercise controls ($n=39$; 18 females). Exercise participants were required to complete supervised RT exercise sessions 3 days/wk in a dedicated exercise facility. Participants were instructed to maintain their usual *ad libitum* diet and nutrient intake was assessed using 7-day digital photography diet records plus recall methodology and were analyzed using NDSR. General linear mixed modeling was used to examine overall group differences (group effect), change over time (time effect), and group differences in this change (group x time interaction). All analyses were conducted using SAS 9.4 (SAS Institute Inc., Cary, NC).

RESULTS: Absolute EI (kcal/day) significantly decreased in controls and exercise intervention groups (time effect $p=0.035$). There were no significant group effects or group x time interactions. In women, absolute EI significantly decreased in each group (time effect $p=0.042$); there were no significant group effects or group x time interactions. In men, there were no significant effects for group, time, and group x time interaction for absolute EI. Similarly, relative EI (kcal/kg/day) significantly decreased in controls and intervention groups (time effect $p=0.001$). There were no significant group effects or group x time interactions. In women, relative EI significantly decreased in each group (time effect $p=0.014$); there were no significant group effects or group x time interactions. In men, there were no significant effects for group, time, or group x time interactions.

CONCLUSIONS: Energy intake significantly decreased in participants completing a RT trial and this decrease did not differ between intervention and control subjects. Decreases over time may be resulting from the impact of self-monitoring dietary intake or enrolling in an exercise study with the intention of losing weight. Similar evaluations of EI during exercise trials indicate that dietary compensation for energy expended in physical activity is minimal or insignificant, and this study corroborates these findings, demonstrating that RT at this volume and frequency is unlikely to result in clinically meaningful changes in energy intake.

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SOCIAL DESIRABILITY, FOOD INTAKE, AND RESPONSIVENESS TO MOOD INDUCTIONS

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Research suggests social desirability is associated with underreporting of unhealthy food intake and overreporting of healthy food intake, but research examining the effect of social desirability on observed food intake is lacking. This secondary data analysis examined if social desirability levels were negatively associated with food consumption. Participants ($n=58$; 26% male, 38% obese) were recruited for an emotional eating study that required responsiveness to anger and anxiety mood inductions for eligibility (at least a 4-pt. increase on the profile of mood states subscales). Participants completed the Marlowe-Crowne Social Desirability Scale and the Health and Taste Attitudes Questionnaire during screening and, if eligible, underwent anger, anxiety, and neutral mood inductions on separate days. Participants were provided with 2400 kcal of palatable foods following each mood induction and instructed to consume as much of the food as they would like so that they could rate each food's palatability. Calories consumed were measured by weighing leftovers. Social desirability levels did not contribute to the variance in food intake in the neutral mood condition after controlling for age, BMI category, and sex, $R^2 \text{ change}=.01$. Inconsistent with the literature, social desirability was not correlated with self-reported preference for healthy foods after controlling for age, BMI category, and sex, $R^2 \text{ change}=.00$. Given the null findings for objective food intake and self-reported food preferences, we conducted post-hoc analyses to explore whether the sample was representative of social desirability levels among adults, and whether the mood responsiveness eligibility requirement for the emotional eating study may have impacted the representativeness of the sample. The mean social desirability score of the sample ($M=25.19$, $SD=2.94$) was significantly higher than published social desirability norms for a comparable sample ($M=15.08$, $SD=5.05$), $t=-11.83$, $p<.001$. Since responsiveness to a mood induction was an eligibility criterion for the emotional eating study, individuals with low social desirability may not have been as responsive to mood inductions compared to individuals with high social desirability, who may have been more suggestible during the mood induction. Social desirability was positively correlated with change in anxiety following the anxiety mood induction, $R=.31$, $p=.02$, but not with change in anger following the anger mood induction. Social desirability was not associated with objective food intake or self-reported food preferences in a sample of adults with lean or obese BMIs. The limited variability in social desirability scores could have impacted our ability to observe a relationship between social desirability and food intake in our sample. Future studies examining the impact of social desirability on objective and subjective food intake are warranted.

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F034

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THE EFFECT OF A TEXT MESSAGE-BASED INTERVENTION ON ADHERENCE, WEIGHT LOSS, AND DIET QUALITY

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Background: One of the main challenges of weight loss trials is participant motivation and adherence after the active intervention ends. Short-message service (SMS)-delivered interventions have shown positive, short-term effect on behavior change. While there is some evidence of success when using mobile technology during the first six months of a weight-loss intervention, less research has been conducted after the first six months.

Objective: The purpose of this paper is to evaluate the effectiveness of SMS on class attendance, diet adherence, diet quality, and weight change post active intervention in a large weight loss trial.

Methods: The SMS intervention was based on the cybernetic model of self-control (CMSC) with participants receiving 3 to 4 messages a week. All participants in the last cohort (cohort 5, $n=128$) of a large randomized weight loss study of 609 participants were offered a SMS-intervention as an attempt to improve participant adherence during the last 6 months of a 1-year weight loss program. A propensity score model (PSM) was estimated using the 97 participants who opted to receive SMS and those 31 who declined in Cohort 5. The PSM was used to match Cohort 5 text message participants to a control group from Cohorts 1–4. A two-sample t-test was used to assess the differences between the intervention and matched control group in four main outcomes: (1) proportion of class attendance from 6 to 12 months, (2) diet adherence measured as total carb for LC at 12 months and total fat for LF at 12 months, (3) diet quality measured by the Healthy Eating Index (HEI) and Alternative Healthy Eating Index (AHEI) at 12 months, (4) 12-month minus 6-month weight change. Scatterplots and Spearman correlations were also used to assess the dose-response relationship between proportion of text messages responded and the four outcomes listed above.

Results: The results suggest that receiving text messages had no effect in participants losing more weight in the last 6 months of the study compared to controls; mean difference=0.26 kgs., 95% CI (-0.96, 1.48), $p=0.68$. Similar results were observed for proportion of class attendance after 6 months; mean difference (of SMS group minus control?) = 4.63%, 95% CI (-4.43, 13.68), $p=0.31$. No significant relationships were observed for diet adherence and diet quality either. The dose response correlation showed a positive significant relationship between percentage of messages to which participants responded and class attendance (correlation=0.45, p

Conclusions: While the current text message intervention did not improve weight loss or class attendance, future studies should pilot different SMS interventions that promote more effective user engagement.

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E-HEALTH PORTAL TO SUPPORT SELF-MANAGEMENT IN YOUNG PEOPLE WITH CANCER: A FEASIBILITY STUDY

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EXAMINING POTENTIAL MODERATORS OF THE PERSUASIVE EFFECTS OF COLORECTAL CANCER SCREENER VS. SURVIVOR TESTIMONIALS

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Narrative communication styles use storytelling and testimonials to depict events and consequences for characters. Because narratives engage audiences in stories that may not be overtly persuasive, narratives -particularly those of real-life experiences- are generally expected to reduce individuals' tendencies to respond defensively to a message or source and thereby increase message-congruent attitudes. Less is known about audience characteristics that may moderate narrative effects and warrant more tailored messages.

We randomized 477 adults age 50–75 years old who were not adherent to colorectal cancer screening (CRCS) guidelines and had no history of cancer to one of three groups: 1) CRCS information only, 2) CRCS information plus a photo and text narrative of a CRC survivor, or 3) CRCS information plus a photo and text narrative of a CRC screener who did not have cancer. Photos were tailored on the participant's sex, age group and race/ethnicity. Participants completed surveys online before and after exposure to the intervention and 1, 6, and 12 months follow up.

We examined participant's demographic (sex, race (white/other), partnered, age), healthcare (regular doctor, doctor recommended CRCS) and psychological (perceived relevance, attitudes toward prevention, Big 5 personality traits) characteristics as potential moderators of the effect of narrative vs. informational and survivor vs. screener messages on intention (3 items, 0–100) and CRCS by 12 months follow up. Continuous variables were centered and interaction terms were tested with UNIANOVA and logistic regression for intention and CRCS outcomes respectively. Stratified analyses were used to report the few differences found.

Participants who read a narrative and did not have a regular doctor had lower CRCS intention post-intervention (M=57, SD=29) than info only (M=69, SD=27); no difference for those with a regular doctor (narrative M=68, SD=28; info only M=68, SD=26), F=3.68, p=.056. Participants who read survivor (vs. screener) narratives were more likely to get CRCS, but only if they had a regular doctor (OR=2.43, CI:1.36–4.33) vs. no doctor (OR=.58, CI: .20–1.68), p=.021. Neuroticism was significantly associated with intention in the info only (Beta=-.24, p=.005) vs. narrative groups (Beta=-.02), t=1.97, p=.05. Extraversion was related to intention for info only (Beta=.23, p=.009) and the screener narrative (Beta=.19, p=.04) but not the survivor narrative; t=-2.25, p=.026.

Understanding how narratives influence cognitions and behaviors is critical to maximizing their effectiveness, reducing any negative consequences, and developing appropriate applications for diverse settings. Results from our study found few moderating effects that would warrant tailoring narratives to audience characteristics, but having a regular doctor is important for CRCS intentions and behavior.

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F037

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THE USE OF PRONOUNS DURING PRIMARY CARE VISITS AND THEIR RELATIONSHIP TO PATIENT SATISFACTION

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Previous research has shown that the use of pronouns can indicate where the speaker's attention is focused. Singular first-person pronouns (e.g., I, me, my) suggest that the speaker's attention is focused on themselves, whereas plural first-person pronouns (e.g., we, us, our) suggest that the speaker's attention is focused on someone else. Pronoun use has been studied in many areas but little research has examined pronoun use during medical visit communication. The purpose of the current study was to examine associations between physician and nurse pronoun use and patient satisfaction. It was hypothesized that (1) the use of plural first-person pronouns by both physicians and nurses would be positively associated with patient satisfaction and (2) the use of singular first-person pronouns by both physicians and nurses would be negatively associated with patient satisfaction. Linguistic Inquiry Word Count Software (LIWC) was used to analyze transcripts of videotaped medical visits collected as part of a larger study. LIWC gives a percentage of words that fall into each category of its dictionary. Subscales from a modified version of the PSQ 18, used in the RAND Medical Outcomes Study, were used to measure overall satisfaction with the physician and the nurse. Participants ($n=151$) included those who agreed to have their visit recorded and filled out a post-visit questionnaire. Correlations revealed no relationship between physicians' use of singular first-person pronouns or plural first-person pronouns and patients' reported satisfaction with their physician ($r = .10, p = .22; r = .02, p = .86$). Results showed no relationship between nurses' use of plural first-person pronouns and patients' reported satisfaction with their nurse ($r = -.02, p = .78$). Results revealed a significant negative correlation between nurses' use of singular first-person pronouns and patients' reported satisfaction with their nurse ($r = -.17, p = .04$). This negative association could be due to patients' perceptions that their nurses are not solely focused on them, therefore lowering satisfaction with that aspect of their care. Results suggest that medical visit communication should be studied in a comprehensive way; for example, researchers should study word use in addition to nonverbal communication or overall communication quality.

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F038

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EVALUATION OF DEPRESSION AND SUICIDE SCREENING ON INPATIENT CANCER UNITS

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INTRODUCTION: Although suicide is the tenth leading cause of death within the United States, many hospital systems do not have standardized prevention or treatment procedures for suicidal ideation (SI). In response, the University of Kansas Health System created the Suicide Prevention Task Force to assess current hospital wide practices, and determine areas for change. The purpose of this quality improvement study was to evaluate suicide prevention protocols specifically on our cancer inpatient units.

METHODS: Data were collected during May 2017 on all patients who were screened on our three inpatient cancer units. Patients are screened upon arrival by nursing staff. Current protocol is to ask one question about depression, and one question about SI. Patient responses were entered as "yes" or "no" into the patient's electronic medical record (EMR). This data was extracted by our EMR reporting team. For patients who screened positive, we then collected variables from the EMR related to psychotropic use, participation in psychotherapy, and follow up safety interventions.

RESULTS: Of the 151 patients screened, only six endorsed feelings of depression. The majority ($n = 4$) of these patients were female. Half of the patients who endorsed depression were prescribed a psychotropic medication. Most ($n = 4$) had not met with a psychologist at our facility. Zero patients were recorded as endorsing SI. Because no patients were recorded as expressing SI, we did not have any follow up safety interventions upon which to report.

DISCUSSION: These results are surprising, especially given that the suicide rate within in cancer populations is estimated to be twice that of the general population. There are a few possible explanations for our results: 1) The questions the inpatient units are currently utilizing to assess for depression and SI lack validity; 2) Patients are only being screened upon arrival, and thus staff are only capturing comorbid depression and SI, and not that which develops of the course of a month-long hospital stay; 3) Nursing staff may not be able to assess all patients, and therefore the default response within the system is to mark patients as "no" to these questions. Our results suggest that depression and suicide assessment strategies within healthcare systems should be evaluated for validity and feasibility in order to ensure that patients are being properly screened and receiving appropriate interventions.

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PEER REJECTION AND EMOTION DEVELOPMENT: THE ROLE OF PEER REJECTION AND COMING OUT ON EMOTIONAL HEALTH AMONG GAY AND BISEXUAL MEN

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Background: Minority stressors, such as stigmatization and rejection, have been associated with emotion dysregulation levels among gay and bisexual men, and sexual identity milestone achievement may be important for understanding this association. Coming out to others, specifically to friends and peers, can be a wholly rewarding, or otherwise difficult experience for gay and bisexual youth; however, research has not fully explored its implication on the association between minority stress and mental health outcomes across the lifespan. To address this gap in research, this study examined the potential mediational role of the age of first coming out to friends on the association between childhood experiences of peer rejection and levels of emotion dysregulation in adulthood.

Method: This study uses baseline computer-assisted self-interviewing (CASI) survey data, measuring key and demographic variables. Surveys were completed among a sample of gay and bisexual men (n=367) recruited in and around the New York City area.

Results: Results from multiple hierarchical regression showed that peer rejection predicted levels of emotion dysregulation, $\beta = 0.29$, $p < 0.01$, and age of first coming out to friends, $\beta = -0.13$, $p < 0.05$. Thus, age of first coming out to friends did not mediate the association between childhood peer rejection and levels of emotion dysregulation in adulthood.

Discussion: Though mediation was not supported, the temporal association between peer rejection experiences and levels of emotion dysregulation suggest that minority stressors experienced in childhood could have lifelong mental health consequences for sexual minority populations. This study adds to a body of research that suggests the importance of early stigmatization and rejection prevention measures, contributing to the development of positive relationships and accepting environments for sexual minority youth. Furthermore, this study contributes to research that informs psychological interventions that target the psychological and environmental factors that contribute to poor mental health outcomes among sexual minority populations.

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NEUROENDOCRINE DYSREGULATION IN OEF/OIF/OND VETERANS WITH A HISTORY OF MILD TRAUMATIC BRAIN INJURY

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As the 'signature injury' of the Operation Enduring Freedom/Operation Iraqi Freedom/Operation New Dawn (OEF/OIF/OND) conflict, understanding traumatic brain injury (TBI) has been a prime focus within the VA healthcare system. One aspect of TBI that has received attention is the sequelae of neuroendocrine dysfunction (NED). Studies in civilian populations have found associations between TBI and aspects of neuroendocrine dysfunction, such as hypothyroidism and testosterone deficiency (Englandar, Bushnik, Oggins, & Katznelson, 2010). Similar relationships also have been evident in samples with mild TBI (mTBI; Tanriverdi et al., 2009; Wilkinson et al., 2012). Wilkinson et al. (2012) found 42% of Veterans (N=26) with blast-related mTBI had abnormal hormone levels in one or more pituitary axes while three of these Veterans had testosterone and gonadotropin concentrations consistent with hypogonadism. Further, TBI and possibly NED symptoms also may be associated with PTSD, depression, and sleep complaints. The aim of the current study was to conduct a small pilot test of screenings for NED in OEF/OIF/OND veterans with cognitive complaints. The sample comprised of 137 participants (95% male, 71% Caucasian, ages 21 to 58) who were evaluated in a TBI assessment clinic. A subset (n = 50) of Veterans obtained bloodwork for suspected NED based on responses on a screening questionnaire: levels of thyroid stimulating hormone (TSH) and testosterone were collected for 40 and 14 Veterans, respectively. One Veteran had low TSH and 3 had low testosterone levels. Domains of cognitive were measured by the Neuropsychological Assessment Battery (NAB). These were each significantly and positively related with TSH levels and those with low testosterone showed poorer performance on immediate recognition, executive functioning, and digit forward & backward subscales of the NAB ($ps < .05$). However, self-reported cognitive complaints were not significantly related to TSH or testosterone. There also were no significant correlations among dysregulated TSH or testosterone, PTSD symptoms (per the PTSD Checklist), insomnia symptoms (Insomnia Severity Index), or depression symptoms (Beck Depression Inventory-II). These preliminary findings suggest that aspects of neuroendocrine dysfunction may be related to decrements in objective cognitive performance, but may not have as much of an impact on psychiatric and sleep symptoms as is commonly thought.

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CHANGING IMPLICIT ATTITUDES TOWARD PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOR WITH ENVIRONMENTAL CUES DURING REHABILITATION

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Objective. Recent frameworks have been developed to encourage the conduct of interventions targeting implicit (i.e., non-conscious, unintentional) motivational processes. The philosophy of those frameworks is to conceive “discrete” interventions that do not require participant reflection, such as exposition to images or posters. Based on past research, this study evaluates the impact of a 4-day exposure to posters associating physical activity or sedentary behavior with positive attributes on (1) implicit attitudes toward physical activity *versus* sedentary behavior, and (2) moderate to vigorous physical activity.

Design. To enhance ecological validity, this study was conducted among participants enrolled in a pulmonary rehabilitation program. Participants (N=79) were randomized into groups (i) exposed to posters of people being physically active, (ii) exposed to posters of people engaged in sedentary behaviors, or (iii) not exposed to posters (control). Over four days, different posters were put in patients’ bedroom. Participants were not informed of the link between the intervention and the evaluations. A third person blinded to the hypotheses conducted the intervention.

Main Outcomes Measure. Implicit attitudes were measured with an Implicit Association Test at the start and at the end of the intervention. Physical activity was measured with accelerometers during the weekend following the intervention.

Results. Regarding implicit attitudes, the analyses showed a non-significant time x group interaction, $F(2, 65) = .462, p = .632$. There were also no significant differences between the three groups regarding physical activity, $F(2, 61) = .331, p = .719$. Confirmatory Bayesian analyses indicated decisive and moderate evidence for the null hypothesis respectively ($BF_{01} = 100; BF_{01} = 6$). Last, an ancillary analysis (i.e., stepwise regression) indicated that baseline implicit attitudes were significantly associated with physical activity after the intervention, controlling for important physical activity covariates ($\beta = .35, p = .048$).

Conclusion. Putting posters in patients’ bedroom during a rehabilitation program did not impact their implicit attitudes nor physical activity behavior. Other studies are needed to develop effective interventions targeting implicit attitudes. Targeting this variable could help to develop innovative physical activity promotion strategies.

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F042

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TWEET AND RUN: ASSESSING THE IMPACT OF SOCIAL COMPARISON AND SOCIAL MEDIA ON PHYSICAL ACTIVITY

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Background. Obesity prevalence in the United States has reached epidemic proportions with a majority of the adult population, ages 18 years and older, overweight or obese. Overweight and obesity is associated with a plethora of health, social, psychological and economic issues. A major contributor to the obesity epidemic is a lack of physical activity. Thus, developing interventions to increase physical activity among young adults is essential in lowering the risks related to being overweight or obese. One potential approach is to utilize social psychological theories, such as social comparison theory. Previous research has successfully manipulated social comparison targets to increase advantageous health outcomes, such as physical activity. Historically, social comparison manipulations have separated upward and downward comparison information into two conditions. The current study includes a combined social comparison condition (i.e., upward and downward comparison information), with all comparisons manipulated within the context of social media.

Method. A sample of undergraduate students ($N=124, 74.2\%$ female), from a Northeastern university, took part in a longitudinal study examining the effects of social comparison theory in the context of social media (i.e., Twitter) lasting 8 days. Participants were randomly assigned to one of four conditions: upward comparison, downward comparison, combined (upward + downward) and control. Participants in the upward condition received tweets from a highly active person, participants in the downward condition read tweets from an extremely inactive individual, those in the combined condition viewed tweets from both active and inactive individuals, and the control condition participants read tweets unrelated to physical activity and diet. The primary dependent variables were physical activity attitudes, intentions and behavior, measured at T1 and T2. Exercise self-efficacy and social comparison orientation information was collected to assess a potential interaction of these two variables on the relationship between condition and the primary outcomes.

Results. A MANOVA revealed that there was no significant main effect of condition on physical activity attitudes, intentions or behavior. In addition, neither exercise self-efficacy nor social comparison orientation, significantly moderated the relationship between condition and physical activity attitudes, intentions or behavior.

Conclusions. Even though the results are not significant, the study informs future social comparison research by providing information about the effects of combining upward and downward information, as well as how this form of research can be carried out in a setting outside of the laboratory and in the context of social media.

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CAN JUST-IN-TIME ADAPTIVE INTERVENTIONS IMPROVE SELF-EFFICACY TO PREVENT DIETARY LAPSES?

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Lapses from a dietary prescription contribute to suboptimal outcomes in behavioral weight loss (BWL) treatments. Recent studies using ecological momentary assessment (EMA) have shown that low self-efficacy is related to increased risk of dietary lapses, but little research has focused on targeted interventions to increase self-efficacy and therefore prevent dietary lapses. This study aims to understand the impact of just-in-time adaptive interventions (JITAI; a method for providing interventions to participants in real-time, daily settings) on self-efficacy in following a dietary prescription. We hypothesized that opening an intervention targeting self-efficacy will be associated with lower likelihood of lapse at the next time point. Participants with overweight/obesity ($n=35$) followed a self-guided, commercial weight loss diet for 8 weeks while also using an app called OnTrack. OnTrack used EMA to assess dietary lapses and self-efficacy through the first 2 weeks of the study. After 2 weeks, OnTrack utilized a machine learning algorithm to predict dietary lapses and subsequently deliver brief micro-interventions personalized to individual risk factors. OnTrack delivered micro-interventions as automatic notifications on a smartphone device. Participants could then choose to open the notification for more information on their risks of dietary lapse. Successful interventions were defined as participants not reporting a dietary lapse at the EMA survey immediately following receipt of a micro-intervention (~3 hours). Participants received an average of 3.72 self-efficacy-focused micro-interventions per week over the 6-week intervention period. Eighty-two percent of interventions were opened by participants. Generalized estimating equations revealed that opening an intervention to increase self-efficacy did not appear to influence lapse behavior during the 6-week period ($B=1.26$, $p=0.27$). However, individuals with generally high levels of self-efficacy (assessed through an average of EMA survey responses) were less likely to lapse ($B=-0.47$, $p<.001$). Further, every one unit increase in self-efficacy (compared to their own average self-efficacy) decreased the likelihood of a lapse by 63% ($B=-0.22$, $p<.001$). Results suggest that self-efficacy can be a protective factor against lapsing, but more research is needed on effective methods for targeting self-efficacy using in-the-moment intervention methods.

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F044

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DEVELOPMENT OF A MEASURE OF VALUES CLARITY, AND ITS ASSOCIATION WITH WEIGHT CHANGE OVER TIME IN A BEHAVIORAL WEIGHT LOSS PROGRAM

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Values, or the overarching principles by which we live, may strongly influence health behaviors. In particular, having clarity of values helps individuals commit to healthy behaviors that may otherwise be difficult to engage in. Especially for overweight and obese populations seeking weight loss, gaining values clarity (VC) may facilitate engaging in less pleasurable behaviors in the service of a health value. However, there are no well-defined measurement tools for VC in the current literature, perhaps because of the challenges of measuring such an individually oriented construct. For example, it would be difficult to create a reliable questionnaire listing all known valued categories to be rated on a Likert scale of importance to the individual. As such, no VC measures have been developed. Thus, we aimed to create a measure of VC, and test its association with weight loss in a large obesity trial to assess its reliability in predicting acceptance-based treatment (ABT) outcomes. Participants who were overweight ($n=129$) were randomized to receive 25 sessions of either ABT or standard behavioral treatment (SBT) for weight loss over 1 year. Assessments were conducted at baseline and post-treatment, in which weights and VC measure responses were collected. On a lab computer, participants were asked to type several of their most important values. Responses were coded using a scoring system from 1–3 (where 1 indicated evasion of the question, 2 indicated an attempted response that constituted a goal, and 3 indicated a value). Higher scores indicated greater VC. We hypothesized that 1) an increase in VC from baseline to post-treatment would be associated with greater percent weight change (PWC) from baseline to post-treatment, and 2) that treatment condition would moderate the association, such that those in the ABT condition who experienced an increase in VC would exhibit greater PWC. We also expected that the coding system would be feasible, in that each unique response would fit into a scoring category. Results showed that the system was feasible. However, average change in VC ratings was not significantly associated with PWC ($r=.10$, $p=.27$). Additionally, treatment condition did not moderate VC's relation with PWC ($F=2.33$, $p=.13$, $\eta^2=.02$). Data is not yet available to evaluate the measure's psychometric properties, but results suggest that the measure requires refinement to be reliable. Limitations and implications for its future iterations will be discussed.

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F045

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WEIGHT LOSS AND PERCEPTIONS OF HOME-PREPARED FOOD CONSUMPTION

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Introduction: There has been a continuous shift from foods prepared at home to food prepared outside of the home. Approximately one-third of daily energy intake comes from fast-food outlets and restaurants. Increased home food preparation is associated with an increased likelihood of meeting dietary objectives, improved overall health and survival, and decreased BMI. The current investigation examined home-prepared food consumption and weight loss, and perceptions of preparing and consuming home-prepared food utilizing ecological momentary assessment during a 16-week self-administered weight loss intervention.

Method: The current sample consisted of 47 individuals (79.6% female) with $M_{BMI} = 36.71$, $SD_{BMI} = 5.48$. Participants completed ecological momentary assessment (EMA) following each eating episode for the first two-weeks of an internet-based, self-administered weight loss intervention providing automated tailored feedback. Participants reported on food preparation behaviors, perceptions of consuming home-prepared food, and barriers associated with preparing and consuming home-prepared food.

Results: Participants in the current investigation achieved an average weight loss of 1.7% of total body weight ($M = 4.07$ lbs., $SD = 10.34$). There was a moderate effect ($r = -.455$) of home-prepared food consumption on weight loss following the intervention trending in the predicted direction ($p = .077$). Within-subjects effects indicated that relative to meals prepared outside of the home, home-prepared meals were associated with greater perceptions of: 1) eating consistently with nutrition goals, 2) being able to maintain one's diet, and 3) success with one's diet, all of which were significant at $p < .001$. Between-subjects effects indicated that home-prepared food consumption was associated with greater perceived consistency with meeting nutrition goals, $p < .05$.

Discussion: This investigation provides evidence that home-prepared food consumption has daily impacts on weight loss and perceptions of successful dietary behaviors. Home preparation may enable individuals to consume a more balanced and healthful diet. Foods prepared outside the home have been shown to consist of energy dense meals and are high in fat and saturated fat. Substituting foods outside the home for those home-prepared may increase the likelihood of avoiding a caloric surplus that would otherwise prevent successful weight loss or weight maintenance. Further, increased perceptions of eating consistent with nutrition goals, and success and ability to maintain one's diet, may lead to increased treatment adherence that promote successful weight loss outcomes. Taken together, home-prepared food consumption appears to support weight loss and may foster beliefs that enable individuals to overcome barriers related to healthful food choices.

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F046

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EXAMINING PERCEPTIONS OF KNEE JOINT REPLACEMENT AND PHYSICAL ACTIVITY AMONG WOMEN WITH KNEE OSTEOARTHRITIS (OA): DAPPA STUDY

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Background: Knee Osteoarthritis is a degenerative, debilitating condition affecting functional mobility and pain. The aim of this study was to examine perceptions (beliefs, attitudes and knowledge), towards knee joint replacement (KJR) and physical activity among aging women with knee OA.

Methods: Four focus groups (9 African-American [AA], 7 non-Hispanic White women [nHW]) were conducted to examine the experience of living with and managing knee OA pain among women; ages 51- 72. Sessions were facilitated by researchers trained in qualitative methodology, and were approximately two hours, audio-taped, text transcribed verbatim, coded and analyzed using content analysis to identify emergent themes, categories and meanings.

Results: Diagnosis of knee OA ranged from four months to 20 years. Sixteen (16) women participated in the focus group; nine AA and seven nHW. Women reported their perceptions of KJR and physical activity. When asked, "would you consider KJR?" six white women would consider: one would not; seven AA would not. Of those reporting having had KJR, two AA women had a positive response. While none of the nHW reported having had the surgery. Responding to "do you engage in physical activities?" women were similar in reporting types of activities in which they engaged: water aerobics, bicycling, and walking. When asked "how does pain affect physical activity?" women were also similar in reporting activities of daily living (gardening, shopping, house chores) that limited their physical function due to pain.

Conclusion: Although KJR surgery and PA are beneficial for improving health related quality of life among individuals diagnosed with knee OA, this study suggest that AA women are less likely to undergo KJR. Thus, KJR may not be a culturally acceptable treatment option. Moreover, task appropriate recommendations for PA may improve physical functioning necessary to cope with pain limitations.

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F047

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THE EFFECTS OF INTERRUPTING SITTING TIME ON AFFECT AND ANXIETY IN CHILDREN

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Introduction: Overweight children are more likely to be lower in positive affect, higher in negative affect, and are more likely to have anxiety as compared to their healthy weight peers. Evidence indicates that aerobic physical activity can be an effective method for improving affect and anxiety in children. Therefore, the aim of this study is to assess whether brief interruptions in sitting with short bouts of low-intensity walking over 3 hours is sufficient to influence anxiety, positive affect, or negative affect in 7-11-year-old children; as well as to test how weight status may influence the efficacy of reducing sitting time for improving affect and anxiety.

Design/Methods: In this secondary analysis of a randomized crossover study, children (N=64; mean (SD) age=9.54 (1.32); 44% healthy weight) completed two experimental conditions: continuous sitting for 3 hours, and sitting for 3 hours interrupted with moderate-intensity walking for 3 minutes every 30 minutes. Anxiety, positive affect, and negative affect were assessed at pre-test and post-test. Separate multilevel models for repeated measures assessed whether experimental condition predicted post-test scores. All models were adjusted for randomization order and pre-test scores. Sex, age, and race were tested as covariates, and weight status was tested as a moderator of the relationship between experimental condition and post-test scores.

Results: Experimental condition was not significantly related to post-test anxiety, positive affect, or negative affect in the overall sample. The relationships between post-test anxiety, post-test positive affect and experimental condition were not moderated by weight status. However, weight status was a significant moderator ($p < 0.05$) of how experimental condition affected post-test negative affect. Negative affect was significantly lower in the healthy weight children after the interrupted sitting ($p < 0.05$); while negative affect was slightly higher in the overweight children after the interrupted sitting condition ($p = 0.16$).

Conclusions: Interrupting prolonged sitting with mini-bouts of walking predicted lower negative affect scores at post-test in healthy weight children and demonstrated no effects in the overweight children. Interrupting sitting with brief bouts of moderate-intensity walking did not significantly influence anxiety or positive affect. This study indicates that weight status may influence the efficacy of reducing sitting time for improving affect. Further research is needed to understand how reducing sitting time with different dosages of short bouts of walking may influence affect and anxiety in order to inform effective interventions.

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INDICATORS OF ACCULTURATION ARE NOT ASSOCIATED WITH EVER CIGARETTE USE AMONG HISPANIC/LATINO COLLEGE STUDENTS

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Background: Higher levels of acculturation have been shown to be associated with smoking in Hispanic/Latino adults. Informed by Schwartz and colleague's bidimensional model of acculturation (behavioral, values, and identity domains), we examined the associations between behavioral and identity-based acculturation and ever smoking among Hispanic/Latino and non-Hispanic/Latino students attending a Hispanic-Serving Institution (HSI) in Chicago. We hypothesized that less acculturated students, particularly those identifying as Hispanic/Latino, would be more likely than more acculturated students to report ever smoking.

Methods: Students (N=709) completed a health behavior survey in the fall of 2015 in which they reported their primary language (a behavioral indicator of acculturation), immigration status (first, second, or third generation American; an identity-based indicator of acculturation), and lifetime smoking. We used logistic regression analysis to examine the association between the two acculturation indicators (primary language, immigration status) and ever smoking, controlling for potential confounders (race, ancestry, age, gender, household smoking, and ever binge drinking). Analyses were conducted in Hispanic/Latino and non-Hispanic/Latino students separately to compare groups.

Results: The sample comprised 39% Hispanic/Latino, 71% women, and 42% racial minority. The mean age was 28.1 (SD=9.4) years. Seventy-nine percent of the sample was U.S. born, 49% lived at home, 74% reported English as their primary language, and 47% were first generation Americans. Primary language and immigration status were not associated with ever smoking for either the Hispanic/Latino or non-Hispanic/Latino groups. Among the Hispanic/Latino group (n=276), students living with a smoker (OR=2.20, 95% CI=1.10–4.41) or those reporting ever binge drinking (OR=8.17, CI=2.78–24.02) were more likely to report ever smoking.

Conclusion: In this large sample of Hispanic/Latino students, neither behavioral nor identity-based acculturation was associated with ever smoking. Examination of other indicators of acculturation, such as cultural values (individualism vs collectivism), is needed, as students drawn to an HSI may experience a unique acculturation process. These findings warrant further investigation on the specific subtypes of acculturation that may influence smoking and other health risk behaviors among Hispanic/Latino college students.

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F049

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USING A REASONED ACTION APPROACH TO PREDICT COMMUNITY-BASED GROUP EXERCISE BEHAVIOR IN HISPANICS: PRELIMINARY FINDINGS

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Background: Engagement in community-based group exercise remains understudied in Hispanic populations. Researchers have used reasoned action approaches (RAA) to identify determinants of exercise behavior, but this approach has not been tested to identify beliefs and predictors of group exercise in Hispanics. Thus, the aims of this study were use a RAA framework to explore beliefs and assess the impact of participants' attitudes, perceived norms, perceived behavioral control, and self-efficacy on their attendance and intentions to attend community-based group exercise activities.

Methods: We conducted an elicitation study among a cohort of participants from a larger study conducted in El Paso, TX. Participants completed a questionnaire containing open- and closed-ended questions to identify salient beliefs and practices about attending organized exercise activities. We conducted two separate negative binomial regression models in SAS to assess the effects of RAA predictors on intentions, and the effects of intentions on behavior, both adjusting for demographics; We performed qualitative content analysis by hand.

Results: The majority of our participants (N=76) were female (80%), married (52.63%), homemakers (39.62%), with a household annual income of less than \$19,999 (61.84%), with no formal education (36.84%), and a mean age of 45 ± 13 years. Our qualitative findings suggest that participants 1) value health and behavioral benefits of attending organized exercise activities; 2) feel the approval of family and friends to attend these; 3) identify transportation, time, distance, and costs as factors that could enhance or impede their attendance to organized exercise activities. Quantitatively, we found that instrumental attitudes and perceived behavioral control significantly predicted intentions ($B = 0.45$, $p < .05$; $B = 0.62$, $p < .05$), while adjusting for demographics. However, intentions did not predict behavior at follow up. Our convergent findings suggest that participants who reported intentions to participate in fewer organized exercise activities reported more barriers to attend, compared to those who had intentions to participate in more activities.

Conclusions: We identified beliefs about engagement in community-based organized exercise activities, which could help in the development of persuasive messages to promote this behavior in our sample. We also found that intentions did not predict behavior, a limitation of the RAA approach; thus, future studies should examine other environmental factors.

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F050

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CONFORMITY TO GENDER NORMS AS A MODERATOR OF THE ASSOCIATION BETWEEN RELIGIOUS ORIENTATION AND CONDOM USE AMONG YOUNG ADULTS

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Young adults engage in sexual behaviors that may compromise their health (e.g., unprotected sex) and contribute to sexually transmitted infection health disparities. Intrinsic religious orientation has been associated with less involvement in unhealthy behaviors. Additionally, there are mixed findings in regards to religiousness and condom use. Furthermore, conforming less to gender norms appears to be related to engaging in less risky sexual behavior (e.g., condom-protected vaginal sex) suggesting that gender norms may moderate the association between intrinsic religious orientation and risky sexual behavior. To test the hypothesis that the association between intrinsic religiousness and unprotected vaginal sex will be moderated by conformity to gender norms, participants ($N=234$; 18–25 years; $M=22.9$ years) completed an online survey with measures of religious orientation, conformity to gender norms, and sexual behaviors. Covariate (e.g., age and partner type) adjusted logistic regression and moderation analyses examined the association between religious orientation, gender norms, and condom use at the most recent sexual encounter ($n=198$; 85%). The regression model showed no significant main effects (AOR=0.88, 95% CI 0.593–1.31), and no significant interaction between masculine gender norms and religious orientation ($b=1.35$, $p=.15$, 95% CI -0.48–3.18) or between feminine gender norms and religious orientation ($b=.07$, $p=.91$, 95% CI -1.30–1.46) in predicting condom use at the most recent sexual encounter. Although, religious orientation and gender norms were not significantly associated with condom use at the last encounter, partner type (steady vs. non-steady) was significantly associated ($b=-.75$, $p=.01$, 95% CI -1.35–-.016). Further research is needed to identify other variables that may play a role in the relation between religious orientation and risky sexual behaviors (e.g., sexual health knowledge).

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F051

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COUNTING SLEEP: THE EFFECTIVENESS OF MESSAGE FRAMING TO INCREASE SLEEP DURATION AND QUALITY

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This study examined the effectiveness of message framing to promote sleep behaviors. Participants (156 American college students) were randomly assigned to read either a gain- or loss-framed message. The gain-framed message focused on the benefits of sufficient sleep duration and good sleep quality, and the loss-framed message focused on the costs of insufficient sleep duration and poor sleep quality. Participants' motivational orientation (the extent to which they seek out positive outcomes or avoid negative outcomes) and sleep behavior were assessed at baseline. Potential mediational measures were assessed including time participants spent reading the message, recall of message content, and the extent to which participants elaborated on the message. Before participants left the lab, they reported their sleep-related intentions for the following week. One week later, participants reported their sleep duration, sleep quality, and sleep hygiene behaviors. Because previous research suggests a gain-framed advantage for preventative health behaviors, we predicted a gain-framed message would outperform the loss-framed message. Contrary to this hypothesis, a gain-framed message did not promote sleep intentions, sleep duration, sleep quality, or sleep hygiene behaviors better than a loss-framed message. Further, inconsistent with previous research and our prediction, motivational orientation did not moderate message framing effects on sleep behaviors. Because there was no effect of message framing or the interaction of motivational orientation and message framing on sleep behaviors, mediational effects were not examined. The results of the present study suggest that a gain-framed message was not more effective at promoting sleep behaviors than a loss-framed message. Perhaps, sleep is too complex of a behavior for such a subtle manipulation as message framing.

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F052

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DUAL EFFECTS MODEL OF SOCIAL CONTROL: EXTENDING THE MODEL TO 24-HOUR HEALTH BEHAVIOR

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The influence of biobehavioral factors on human health and functioning has been well documented, though the majority of the research has examined this only at the level of the individual. Many health behaviors occur in a social context, with romantic partners exerting a particularly strong influence over health-related behaviors through processes such as social control. Findings to date support a Dual Effects Model of Social Control, which suggests that partners can positively and negatively influence the waking health behaviors of their partners. However, the current model has a limited scope, and fails to consider the impact of control on non-targeted health behaviors, such as sleep. The purpose of this study was to expand the Dual Effects Model of Social Control by including sleep continuity and duration as outcomes related to social control efforts targeted at diet and exercise behaviors. It was hypothesized that, in comparison to no receipt of control or receipt of positive control, negative control would be associated with shorter sleep duration and less continuity. Participants (N=66) completed a 7 day assessment period. Partner control and objective sleep data were collected via daily sleep diaries and Fitbit Charge HR, respectively. Mixed linear models were used to test the daily, direct effects of partner control on subsequent sleep duration and continuity. Analyses revealed no significant relationships between daily control and subsequent sleep. Although results were non-significant, this study's novelty is twofold. It is the first study to expand the model to include the effect of control on non-targeted health behaviors and to include 24-hour health. It is also one of few studies to examine the effects of daily control on immediate health behavior, and questions the influence of social control on daily health behaviors. Recommendations for future research using the proposed model are presented.

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EXPLORING THE EFFECT OF SEXUAL ORIENTATION ON CARDIOVASCULAR DISEASE RISK AND HEALTH BEHAVIORS IN EMERGING ADULTHOOD

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Background: Previous research has shown that sexual minority individuals (SM) are twice as likely to smoke, twice as likely to be overweight or obese, and less likely to be physically active than heterosexual persons; all of which place SMs at an increased risk for cardiovascular disease (CVD). While information on CVD risk by race/ethnicity and socioeconomic status is well documented, there is scant literature examining the potential risk in SMs. The purpose of this study was to examine the impact of sexual orientation on CVD risk in terms of the Framingham Risk Score (FRS) to predict individual's 10-year likelihood of developing a CVD and their vascular age (VA). We hypothesized that the SMs will have higher FRS and VA than HS and MH.

Method: The current study used data from the National Longitudinal Study of Adolescent Health (Add Health). A total of 5,060 samples were extracted and split into three groups based on self-identified sexual orientation: heterosexual (HS, n=4363), mostly heterosexual (MH, n=509), and sexual minority (SM, n=188). The FRS and VA were calculated by entering age, diabetes status, smoking status, body mass index for obesity, and blood pressure into the equation. One-way ANOVA was used to assess differences among sexual orientation groups in FRS and VA.

Results: Results from the current study did not provide evidence indicating a significant relationship between sexual orientation and the FRS or VA [$F(2, 4648)=2.40, p=.091$; and $F(2, 4648)=2.66, p=.070$]. However, SM were twice as likely to be current smokers than HS; to have more drinks than both HS and MH (4.5 vs. 3.80 and 3.38 per occasion, respectively, $p<.001$); and reported significantly higher stress levels than both HS and MH $F(2, 4648) = 30.06, p<.0001$.

Conclusion: The findings from our study did not provide sufficient evidence to support our hypothesis on the impact of sexual orientation on FRS and VA, potentially because of the young age of the study population. However, other findings remain noteworthy by confirming the risk behaviors among SMs that will lead to the development of CVD in the future. Given the presence of increased risk behaviors, monitoring of CVD risk and modification of health behavior are warranted in SM young adult.

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RETHINKING REAPPRAISAL: EVIDENCE FOR A CONTEXT-BASED MODEL OF COGNITIVE REAPPRAISAL

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Emotion regulation (ER) is a process with widespread implications for quality of life in both general and clinical populations. While past research has identified many different ER techniques, some have seen more positive attention in the literature than others. Cognitive reappraisal, or the generation of positive interpretations of stressful situations, is one ER strategy that has been historically seen as "adaptive". More recent research, however, has suggested that its degree of efficacy may be contextually dependent. The present study expands on this research, providing evidence that reappraisal may not be as universally effective as once thought. In this study, 62 participants underwent a stress-induction paradigm where, after an initial baseline (T1) had been established, they were informed of an upcoming impromptu speech task (T2). Before beginning the speech, participants engaged in reappraisal via a writing prompt (T3; "Write about all of the positive aspects of giving this speech, including what you may learn and how you may grow through the experience"). Participant distress was assessed at each time point using heart rate variability (HRV) – the beat-to-beat variation in one's heart rate. In this study, HRV reflected parasympathetic nervous system (PNS) activity, where higher HRV indicated greater PNS activation and less distress. Based on past research using a similar procedure, mean HRV was hypothesized to increase between T2 and T3, reflecting the successful reframing of the stressor and subsequent reduction of physiologic arousal. However, while a significant decrease in HRV was seen between T1 and T2, this distress was not soothed by reappraisal. Instead, mean HRV *continued* to decrease between T2 and T3, indicating that in addition to failing to reduce pre-speech anxiety, the reappraisal task was associated with a significant increase in distress. Overall, this study points to the limitations of reappraisal in a response-focused context (where participants attempted to reframe an already-formulated emotional response), and serves to challenge its role as an infallible ER technique. While future research should test this effect with a control group, these unexpected findings contribute to a growing body of literature that suggests that no form of ER is inherently "good" or "bad." Rather, its value is defined by the situation in which it is used – in this case suggesting that one must understand not only *how* to implement reappraisal, but *when*.

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F055

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DISTRESS AND QUALITY OF LIFE IN RURAL LATINA CANCER SURVIVORS FOLLOWING A 10-WEEK SPANISH-LANGUAGE SUPPORT PROGRAM

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INTRODUCTION. Rates of cancer survivorship are increasing for most cancers. However, Latina cancer survivors tend to experience lower quality of life and higher levels of distress following cancer compared to non-Latina Whites (NLW). While social support resources can alleviate the negative psychosocial impact of cancer sequelae, there are often limited resource availability and uptake among Latina breast and gynecological cancer survivors.

OBJECTIVE. Evaluate the affect of a 10-week *promotora*-led Spanish-language support group on distress and quality of life outcomes.

METHODS. The study was a randomized-control trial of 59 Latina breast and gynecological cancer survivors living a rural setting in Washington State. Eligibility required participants be post-acute treatment (e.g., chemotherapy and radiation) for cancer. The intervention content was developed using Social Cognitive Theory as a framework. Participants attended a weekly session where they received health education on the topics of: stress, nutrition, physical activity, body image, sexuality and intimacy, medical self-advocacy, and social support. A 30–45 minute discussion of the topic was then facilitated by the *promotora*. Following the discussion, participants engaged in an activity that reinforced the educational content/topic. A baseline (T1) assessment of distress (Perceived Stress Scale, Hispanic Stress Inventory) and quality of life (physical, mental, social, functional well being) was followed by a 3-month (T2) assessment upon completion of the intervention. Analyses were conducted using descriptive statistics and independent samples t-tests of T2-T1 change scores for each of the outcome measures.

RESULTS: The participants were diagnosed with breast (n=41), cervical (n=5), endometrial (n=3), ovarian (n=5), and uterine (n=9) cancers. Approximately 60% had less than an 8th grade education and 85% were born in Mexico. Thirty participants were randomized to the control group and 29 to the intervention group. No statistically significant differences were observed between the intervention and control groups for any of the outcome variables. Results for stress were: perceived stress scale [t(57)=0.37, p=0.72], Hispanic Stress Inventory extra-familial subgroup [t(57)=1.8, p=0.09], and Hispanic Stress Inventory intrafamilial subgroups [t(57)=1.5, p=0.18]. Results for quality of life subscales were physical well-being [t(57)=-1.66, p=0.10], social well-being [t(47)=-0.32, p=0.75], emotional well-being [t(57)=-0.41, p=0.97], and functional well-being [t(57)=1.38, p=0.17].

CONCLUSION: The 10-week Spanish language intervention did not affect levels of distress or quality of life among post-treatment Latina breast and gynecological cancer survivors. Implications of these findings will be discussed.

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EXAMINING THE RELATIONSHIP BETWEEN ACCULTURATIVE STRESS, MARIJUANA USE, AND SELF-ESTEEM AMONG HISPANIC COLLEGE STUDENTS.

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Background: Acculturative stress has been associated with increased substance use and psychological distress, especially among minority populations. For example, there is increasing evidence to suggest that factors related to acculturative stress (e.g., language barriers) has been linked to increased alcohol use among Hispanic U.S. college students. Yet, other research has not demonstrated a relation between acculturative stress and substance use. Further examination is needed to assess additional psychosocial factors related to acculturative stress and substance use. The aim of this study was to investigate whether self-esteem may mediate the association between acculturative stress and lifetime marijuana use among Hispanic college students.

Methods: A subset of Hispanic participants (n=190, 133 females, 57 males) completed an online survey examining measures of acculturative stress, substance use, and other psychosocial variables. Participants ranged in age from 17–48 (M = 20.27, SD = 3.44) This study used the Multigroup Ethnic Identity Measure (MEIM) Affirmation/Belonging subscale (as a measure of acculturative stress), the Rosenberg self-esteem scale to assess levels of self-esteem, and a dichotomous item regarding lifetime marijuana use. Mediation analyses using the SPSS PROCESS Macro examined whether elevated acculturative stress was associated with increased likelihood of lifetime marijuana use as mediated by self-esteem.

Results: A total of 38.4% (n=71) reported lifetime marijuana use. Regression analyses examined the hypothesis that increased levels of acculturative stress may be associated with increased likelihood of lifetime marijuana use, mediated by levels of self-esteem. Results indicated that increased acculturative stress was not associated with a lifetime history of marijuana use (b = .09, SE = .07, p = .19). Additionally, self-esteem did not mediate the relationship between acculturative stress and marijuana use (b = .03, SE = .037, p = .48). The indirect effect was tested using a bootstrap estimation approach with 5000 samples; the indirect effect was not significant (b = .002, SE = .004).

Conclusion: Results suggest that acculturative stress was not associated with differential marijuana use among a sample of Hispanic college students, nor was this relation mediated by self-esteem as hypothesized. Researchers should consider longitudinal examinations of acculturative stress and substance use along with constructs that may mediate this relation among Hispanic populations.

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TOBACCO RETAILERS' PROXIMITY TO SCHOOLS IN A PREDOMINANTLY HISPANIC COMMUNITY

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Disparities have been observed in tobacco retailer density among minority and lower socioeconomic communities. In a nationwide assessment of tobacco outlet density (TOD), race, ethnic, and socioeconomic factors were positively associated with TOD. Specifically, higher TOD was observed in communities with lower socioeconomic status regardless of whether it was a rural or an urban community and also in communities that were predominantly Hispanic and African American. Accessibility of tobacco is an important component in smoking behavior and has been correlated to smoking initiation in adolescents. Therefore, the density of tobacco retailers around schools is crucial for tobacco control and policy efforts. The purpose of this study was to identify areas near public and private schools in El Paso, TX with higher density of tobacco retailers. Areas of higher density would help determine the need for policy advocacy (e.g., limiting the number of tobacco vendors in close proximity to schools). School lists were provided by City of El Paso Department of Public Health and tobacco retailers were identified from publically available data on YellowPages. Sample search terms used to identify tobacco vendors included "convenience store," "gas," "tobacco," "vape," "hookah," and "cig." Based on previous literature, a tobacco retailer was considered to be in close proximity if it was within 800 meters of a school. A cross-classified mixed model was used to identify predictors of distance between a school and a tobacco retailer. Analyses indicated non-significant findings. No relationship was found between tobacco vendors (95% CI: -0.17, 0.27) and the 800m buffer zone or between vaping product vendors (95% CI: -0.43, 0.56) and 800m buffer zone. These findings demonstrated a general dispersion of tobacco retailers not specific to areas around schools. Although the findings from this study yielded null results, this baseline data could be used to restrict future businesses. In addition, more populated zipcodes could be an additional area of focus where a higher density of tobacco retailers may be present. Considering the relationship between accessibility and smoking behavior in adolescents, future research should focus on policy efforts restricting the accessibility of tobacco around schools.

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Saturday
April 14, 2018
8:30 AM-9:45 AM

Symposium 64

8:30 AM-9:45 AM

NURSE-FACILITATED BEHAVIORAL INTERVENTIONS FOR HEALTH PROMOTION AND DISEASE MANAGEMENT ACROSS THE LIFE COURSE

Laura L. Hayman, PhD, MSN, FAAN¹, Randal K. Wada, MD, MS², Sara Baldwin, PhD, RN, APHN-BC³, Amanda Blok, PhD, MSN,PHCNS-BC⁴, Elizabeth Galik, PhD, CRNP,FAAN, FAANP⁵, Marcia Holstad, PhD, FNP-BC, FAANP, FAAN⁶, Barbara Resnick, PhD, CRNP⁵

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Nurse scientists as part of inter-professional teams generate and apply evidence central to holistic care management of individuals and families from diverse populations. As exemplified in this symposium, nurse scientists make unique and collaborative contributions to behavioral interventions designed to optimize health across the life course and across health care and community settings. Using both inductive and deductive approaches to develop multi-component interventions and working with inter-professional teams, nurse scientists focus on engaging patients and caregivers in tailoring such interventions to characteristics of the target population including physical health status, cognitive-developmental capacity, culture, as well as identified needs, preferences, and resources. The purpose of this symposium is to highlight the designs, methods and selected findings of nurse-facilitated, behavioral interventions for optimizing health, functional capacity, and quality of life across the life course and across a variety of clinical settings. Presenters will illustrate the utility of nurse-facilitated, theory-based, multi-component interventions focused on: family-decision making for children approaching end-of-life, engaging grandparents as change agents in Latino family health behaviors, implementing evidence-based technology interventions for behavior change in hospital settings, engaging older adults with dementia in physical activity, and advanced care planning in individuals with HIV/AIDS. The presentations will provide information about the innovative ways in which nurses can integrate these interventions into real world clinical settings. In addition, the incorporation of other members of the health care team will be addressed and ways to optimize those relationships identified.

Symposium 64A

THEORY-BASED FACILITATION OF FAMILY DECISION- MAKING FOR CHILDREN APPROACHING END OF LIFE: INTER-PROFESSIONAL TEAM APPROACH

Dr. Randal K. Wada, MD, MS

Therapeutic decisions for children approaching end of life pose major challenges for both parents and the health care team, as they seek to balance the likelihood of cure and toxicity of therapy with quality of life and minimization of pain and suffering. Conversations regarding choices for care can be so hard on the person initiating the discussion that physicians often defer them, or concentrate only on treatment options and fail to identify and incorporate key family values and priorities into the decision making process. Nurses and other health care team members might recognize when end of life discussions are needed, but are unsure of the roles they should play in facilitating the process, or are relegated to damage control after they have taken place. Together these factors frequently result in aggressive therapy being administered to patients who are so ill that it is not only ineffective, but also aggravates morbidity and erodes their remaining quality of life. To address these challenges a pilot pediatric oncology clinical protocol was created using an inter-professional team consisting of an oncologist, oncology nurse coordinator, social worker, and chaplain. Team members were introduced to playing multiple roles, such as key informant, sounding board, scribe, empath, and emotional monitor, so that they could switch roles as the conversation evolved, depending on the responses and needs of the family. Cognitive roadmaps consisting of sequences of suggested questions were used to structure and guide conversations so that the team could help parents articulate their hopes and identify their priorities as they grappled with the fate of their child. Orientation included practice in communicating with parents using Fuzzy Trace and Prospect Theories, behavioral constructs that facilitate decision making by condensing complex information into meaningful bottom line messages that capture the gist of the clinical situation, and by framing possible choices and recommendations according to the patient's condition and elicited family values. Positive feedback from team members participating in this pilot clinical protocol led to the development of an inter-professional simulation teaching exercise involving pediatric residents, nursing students, social work students, and chaplaincy interns. Pre/post surveys will be used to evaluate the effectiveness of this educational activity to familiarize multi-disciplinary learners with this theory based team approach.

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Symposium 64B

NOVEL FOCUS ON GRANDPARENTS AS CHANGE AGENTS IN LATINO FAMILY HEALTH BEHAVIORS: THE HEALTHY US GRANDPARENT STUDY (HUGS)

Dr. Sara Baldwin, PhD, RN, APHN-BC

Problem/Purpose: Latinos face staggering social inequities largely contributing to growing health disparities in obesity and type 2 diabetes. The purpose of this study is to explore a novel approach to family-centered obesity prevention through the Latino grandparent as the agent for sustained health behavior change in the family.

Background: Almost 8 million children are being raised by their grandparents nationwide. In Texas, 45% of children being raised by grandparents are Latino. The need for exploratory, descriptive work is indicated to assess if South Texas Latino families exhibit a *familismo* culture, where grandparents may influence the health behaviors and outcomes of other family members.

Research Questions: (1) How much time do Latino children spend under the direct care of grandparents? and (2) What is the relationship between the type of care/ provided to the child outside of school and the child's diet and physical activity routines?.

Sample/Setting: This study will be conducted in a large (800 student) public elementary school made up of 95% Latino students, an estimated 40% of whom are cared for primarily by grandparents.

Methods: An exploratory descriptive design will use written bilingual surveys directed toward parents and grandparents and bi-lingual in-person interviews with children. Surveys of adults will focus on time spent with grandparents and the diet and physical activity routines of the family. Interviews with children will focus on their dietary and physical activity preferences and routines. Child height and weight will be measured.

Expected Significance: This investigation will build a deeper understanding of the specific impact grandparents may have on their family's health. This study is a pilot for a planned public school-wide intervention program involving grandparents and grandchildren participating in educational and health promoting activities together to influence the health of the family as a whole.

Symposium 64C

NURSE ENGAGEMENT IN IMPLEMENTING EVIDENCE-BASED TECHNOLOGY INTERVENTIONS FOR HEALTH BEHAVIOR CHANGE IN THE HOSPITAL SETTING

Dr. Amanda Blok, PhD, MSN,PHCNS-BC

Background. Nurses are key stakeholders in implementing evidence-based initiatives in the hospital setting. Nurse engagement in facilitating technology use, such as patient mobile phones for behavior change or care management, in the hospital setting is understudied. There are few studies of nurse-directed implementation of a technology intervention in the hospital setting, and those do not attempt to examine the process of nurse confidence, preparedness and engagement on the use of technology by patients. The aim of this analysis is to describe nurse confidence and engagement in facilitating technology use for behavior change, and to examine their relationship with patient use.

Methods. In the context of a 30-week quasi-experimental study examining a dose-effect of active implementation strategies on the use of a mobile health intervention by smokers (Technology Inpatient Program for Smokers—TIPS) at four hospital units from two same-network Northeast hospitals, quantitative and qualitative data were collected from nurse managers and staff. Survey data from nurses on confidence pre-implementation and engagement post-implementation were categorized and reported by unit. A text message database collected number of smokers using the program, reporting their unit over text. Reach of patients in the 30 weeks of implementation is reported. Qualitative interviews of nurse leaders and staff provide insight into nurse engagement.

Results. Forty nurses participated in providing feedback on pre- and post-implementation measures. The majority of nurses were female (89.2%), white (78.4%), bachelors prepared (73.0%), and work day shift (67.7%). All but one nurse said they had a good understanding of their role in implementing the intervention (97%). There was a range of confidence, with over half were very confident in implementing TIPS (58.1%), while others were somewhat or moderately confident. Unit 2 had the highest confidence scores in implementation, the highest engagement, and the highest reach of patients measured over the 30 weeks. Qualitative analyses revealed additional engagement strategies and suggestions with additional strategies to further engage nurses in implementation programs, such as CEUs and videos.

Conclusions. Further testing of nurse engagement in implementation of technology for behavior change is needed. Future research is needed on the validation of nurse engagement measures for implementing evidence-based practices.

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Symposium 64D

ENGAGING OLDER ADULTS WITH MODERATE TO SEVERE DEMENTIA IN PHYSICAL ACTIVITY

Dr. Elizabeth Galik, PhD, CRNP,FAAN, FAANP

Forty-one percent of nursing home residents in the United States have moderate to severe dementia; 21–45% of these individuals exhibit challenging behavioral symptoms such as physical aggression, agitation and resistance to care. During care interactions, such as bathing and dressing, behavioral symptoms are most commonly exhibited. Some non-pharmacological interventions successfully address behavioral symptoms; however, many utilize sedentary and soothing activities such as massage, reminiscence, music, quiet environments, Snoezelen rooms, and quiet explanations about care. These interventions ignore function and propagate deconditioning and disuse. Residents have limited opportunities to engage in functional and physical activities due to: assumptions by caregivers that cognitively impaired residents cannot actively participate in their own care; persistent use of custodial care approaches that focus on task completion and reinforce dependent behaviors; and institutional policies that restrict resident mobility so as to avoid falls. Staff respond to residents' functional decline by performing the task for the resident rather than encouraging some level of activity. We proposed that it would be possible to maintain or improve function, increase physical activity, and decrease falls among nursing home residents with severe cognitive impairment with no worsening of behavioral symptoms through implementation of Function and Behavior Focused Care (FBFC). FBFC is based on a Social Ecological Model and Social Cognitive Theory and focuses on having nursing home staff teach, cue, model, and assist cognitively impaired residents to perform functional tasks and engage in physical activity. A total of 12 nursing homes and 336 residents participated. The residents were mostly female (n=242, 72%), white (n=199, 59%), widowed (n=131, 38%), and had a mean age of 82.6 (SD=10.1) years and severely cognitively impaired (MMSE=7.8, SD=5.0). Function and Behavior Focused Care was implemented by a research nurse and included 3 components: **Component I** Environmental and Policy Assessments; **Component II** Education and Training of Nursing Home Staff; and **Component III** Ongoing Training and Motivation of Nursing Home Staff. Generalized estimating equations (GEE) were used to perform repeated measures analyses with outcome measures as the dependent variable. Intention-to-treat (ITT) paradigm was followed. Four months post implementation results indicated improvement in physical activity based on actigraphy ($p < .05$), no worsening of behavioral symptoms and no increase in falls. Findings provide some support that nursing home residents with severe cognitive impairment can engage in physical activity safely. Findings have potential to guide and inform future interventions designed to optimize function and physical activity in this population.

Symposium 64E

EARLY PALLIATIVE CARE PLUS NURSE-LED MOTIVATIONAL INTERVIEWING INCREASES ADVANCED CARE PLANNING IN PERSONS WITH HIV/AIDS

Dr. Marcia Holstad, PhD, FNP-BC, FAANP, FAAN

We conducted an RCT to examine the efficacy of early palliative care (PC) plus nurse-led motivational interviewing (MI) sessions (EPC package) compared to standard care (SC) on the outcome of advanced care planning (ACP). MI focused on disease adjustment and discussion of ACP which occurred prior to PC. PC included ≥ 1 visit to the subspecialty and multidisciplinary PC clinic at the large urban HIV care center where the study was conducted.

Eligibility criteria were: Age ≥ 18 , AIDS diagnosis, no current antiretroviral therapy, a detectable viral load; speaks and writes English, able to provide and understand consent. Participants were randomized 1:1 after baseline (BL) to either the EPC package ($n=61$) or SC ($n=60$). ACP was measured by an adapted self-report ACP questionnaire that asked (yes/no) if the participant formally asked someone to be their medical decision maker, signed advanced directives, etc. Multilevel mixed longitudinal modeling was used to test for group, time and group-by-time effects, followed by Sidak-adjusted pairwise post hoc comparisons for significant main effects.

121 participants were followed for 12 months. The mean age was 42.6 years. The sample was predominately male (74.4%), African American (87.6%), un-partnered (91%), had a high school education or less (75%), with an average monthly income of \$654. Over a third were unstably housed and 48% self-identified as gay/homosexual or bisexual. The EPC group tended to have higher rates of signed advanced directives (group effect, 37% vs 21% SC, $p=.055$) at 12m. For those who did not have signed advanced directives, the EPC group had significant 12 month improvements in feeling well-informed about ACP ($p=.005$) and thought about ACP more than the SC ($p=.010$). Compared to their BL rates, the EPC group also had significantly greater improvements at 12 months related to requesting (65%, $p=.043$), discussing with a doctor (50%, $p=.061$); and signing papers to name a surrogate medical decision maker (43%, $p=.028$).

We found a high rate of ACP following the EPC in this predominately African American and vulnerable group. Our rate of 37% for advance directives is well above that of 26% for US consumers and 17% for African American consumers. The EPC intervention shows promise for conducting ACP in persons with AIDS and could be translatable to improve ACP in other groups with chronic disease.

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Symposium 65

8:30 AM-9:45 AM

ETHICAL CHALLENGES IN PRECISION MEDICINE: BUILDING CAPACITY, INFORMED CONSENT AND ENGAGEMENT OF DIVERSE COMMUNITIES

Mona AuYoung, PhD, MS, MPH¹, Camille Nebeker, Ed.D, M.S.,², Elizabeth Cohn, RN, PhD³, Karriem S. Watson, DHSc, MPH, MS⁴, Elizabeth Cohn, RN, PhD⁵

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Precision medicine is gaining momentum as an innovative approach in research. Within the context of precision medicine, there is a growing number of large cohort studies being launched both nationally and globally. A common goal is to study the intersection of genes and health by collecting biospecimens. Across precision medicine initiatives, there is variation in the extent that multidimensional data is collected to understand how lifestyle and the environment influence health. A shared outcome is increasing the speed of research that can advance prevention and treatment of disease. There are many important factors to consider in multidimensional, longitudinal cohort studies – especially with the introduction of digital strategies to facilitate engagement and real time data collection. Our focus is on the ethical, regulatory and social implications of large scale, longitudinal research programs – including recruitment and consent, ongoing engagement and inclusion of diverse populations. The aims of this symposium are to address key ethical issues in the: 1) potential challenges with capacity building such that participants are able to fully participate as partners; 2) use of digital strategies to facilitate access and obtaining authentic informed consent; and 3) recruitment and retention of a diverse cohort with a goal of recommending best practices. The first speaker will discuss the need for capacity building among the cohort with a focus on increasing research, technology and data literacy. The second speaker will examine the research ethics and understanding broad and dual consent, and therapeutic misconception, particularly in large-scale, multifaceted cohort studies. The third speaker will explore the best practices in bi-directional engagement highlighting the difference between engagement and recruitment and how to engage community partners to facilitate diverse participation in research. The discussant will consider how all of these factors influence the development of large-scale studies and the implications for the future.

Symposium 65A

BUILDING RESEARCH CAPACITY AMONG PARTICIPANTS THROUGH ACCESSIBLE EDUCATION DESIGNED TO IMPROVE ENGAGEMENT AS PARTNERS

Dr. Camille Nebeker, Ed.D, M.S.,

Historically, participants in biomedical research have lacked in diversity making results less likely to generalize beyond caucasian males, who are typical research participants. Research programs designed to facilitate precision medicine, seek to change that paradigm by focusing enrollment targets to be inclusive of people typically under-represented in biomedical research. This includes people from minority ethnic and racial groups; low income populations; low educational attainment populations; rural and remote geographical locations; urban centers; and those with low health literacy. However, the enrollment goal is just one step to demonstrating inclusivity of these populations. Likewise, a few research programs stress the need to reflect the interests of the participants by including participants in programmatic decisions. However, for participant to be included in this process, we need to acknowledge the diversity in professional expertise and gap in requisite knowledge. Lack of formal research and clinical training may diminish participant interest in active involvement due to discomfort in expressing views, which subsequently can jeopardize the value of participants being authentic partners. Speaker 1 will describe an educational initiative designed to increase research literacy among lay-research staff and volunteers and how accessible and tailored education can be used creatively as a capacity building tool for increasing engagement among research participants.

Symposium 65B

RESEARCH ETHICS/UNDERSTANDING OF BROAD AND DUAL CONSENT

Elizabeth Cohn, RN, PhD

Recently, several large national studies have emerged that include genetic and genomic testing as an outcome. Exacerbated by an egregious history of the misuse of genetics for “science” such as eugenics, and stories in the public dialogue such as the Immortal Life of Henrietta Lacks, the issues of consent and ethics are front and center, and are a critical focus in communities of color and those who have been previously harmed by the research enterprise. Novel issues in research ethics and informed consent include blurred lines between research and treatment, understandably confusing patients, participants and researchers. As informed consent mechanisms are developed for these studies, in addition to overarching issues such as the trust in the research, specific issues in consent such as the therapeutic misconception (mistakenly thinking that research results will have a direct health benefit), clarity in explaining when and how samples will be used (such as consent to store samples indefinitely and use them for yet undeveloped testing), the mechanisms for and actual utility of returning genetic (of varying certainty) and the tension between sequencing for research and treatment have all been front and center. This speaker will consider the most pressing issues in research ethics and consent for large scale studies with a precision medicine component.

Symposium 65C

BI-DIRECTIONAL ENGAGEMENT WITH COMMUNITY PARTNERS TO SUPPORT ENGAGEMENT AND RECRUITMENT

Dr. Karriem S. Watson, DHSc, MPH, MS

There is a growing emphasis on community engagement to address the challenge of diverse inclusion in clinical and translational research. Central to this discussion is the role of community partners and stakeholders. The engagement and early involvement of community partners/stakeholders has been documented to advance trust and confront ethical concerns such as medical mistrust and lack of transparency in research. However, there are often blurred lines related to recruitment and engagement and there is also a paucity in data to note best practices for ethical bidirectional engagement of community partners/stakeholders to advance trust and ultimately participation in clinical and translational research. The growing momentum of precision medicine is built upon that premise that a diverse group of participants are included and that a diversity of data and information is collected from lifestyle to biomedical. This panel will examine the role of bidirectional engagement of community stakeholders to advance trust in the era of precision medicine.

Symposium 66 8:30 AM-9:45 AM

THE NEED TO ADDRESS WEIGHT STIGMA FROM A PATIENT, TREATMENT, PUBLIC HEALTH AND RESEARCH PERSPECTIVE

Scott Kahan, MD, MPH¹, Patricia Nece, J.D.², Dori Steinberg, PhD, RD³, Dawn K. Wilson, Ph.D., FSBM⁴

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Weight stigma is a serious and pervasive public health issue with wide-ranging mental and physical health consequences. This symposium will highlight the need to address weight stigma from a patient, treatment, public health and research perspective. The speakers are internationally known and each brings a unique perspective on understanding the issues of weight stigma and how to increase awareness and develop solutions for addressing this problem from a variety of settings and perspectives. After each presentation, the discussant will provide a summary of critical issues and future recommendations from each perspective presented.

Symposium 66A

WEIGHT STIGMA FROM A CLINICAL AND PUBLIC HEALTH PERSPECTIVE

Dr. Scott Kahan, MD, MPH

Weight stigma is among the most prevalent reported types of discrimination and, unlike most other types of discrimination, rates of weight stigma are increasing. Weight stigma is commonly reported among family members, healthcare providers, coworkers and other settings. Weight stigma is associated with adverse mental health and physical health outcomes, and experiencing weight discrimination increases the risk for maladaptive eating behaviors and further weight gain. This presentation will review basic epidemiology and consequences of weight stigma, with a focus on weight stigma in healthcare settings. Actionable recommendations for reducing weight stigma will be discussed.

Symposium 66B

WEIGHT STIGMA FROM A PATIENT PERSPECTIVE

Ms. Patricia Nece, J.D.

This presenter will provide a patient perspective on weight stigma. She has lived with obesity her entire life. Along with her excess weight came a lifetime of teasing, bullying and ridicule from peers, relatives, educational institutions, health care providers and even strangers. She internalized these experiences over the years, shaming and blaming herself for not having enough “willpower” to shed her excess weight. Internalizing the stigma made it virtually impossible for her to address her weight in any meaningful way. She will share her experiences of living with severe obesity in a weight-biased society that believes obesity can be solved simply by eating less and exercising more. She will discuss how the bias and stigma she experienced affected her, including when it occurred in medical settings. Patty will also discuss how properly trained physicians and psychologists helped her reduce the stigma’s impact so that she could move forward to constructively manage her weight and obesity.

Symposium 66C

INVESTIGATING “MAINTAIN, DON’T GAIN” APPROACHES TO WEIGHT CONTROL FOR PATIENTS NOT READY OR INTERESTED IN WEIGHT LOSS

Dr. Dori Steinberg, PhD, RD

Up to 50% of patients with obesity are not interested in, or ready for, weight loss. Many patients often feel stigmatized by providers because of their weight, attributed in part to a perceived lack of empathy and trust. Yet for patients not ready for weight loss, clinical practice guidelines clearly recommend that patients with obesity avoid gaining weight. Doing so might contain, or even attenuate, the adverse cardiometabolic risks that accrue with additional weight gain. A focus on weight gain prevention may also reduce perceived weight stigma, particularly if programs focus on body acceptance. However, despite this clinical guideline, weight gain prevention interventions are not available in primary care practice. Our Shape Program trial was the first to evaluate a weight gain prevention intervention in primary care practice. Shape’s participants were medically vulnerable Black women with overweight and obesity who were not explicitly interested in weight loss. We conducted Shape in a multi-site community health center system in rural North Carolina (NC). Shape focused on overall wellness and maintaining one’s “shape” to improve health. The intervention emphasized benefits of changing behaviors independent of weight, such as increasing energy, reducing stress and improving sleep. Specifically, the 12-month Shape intervention, with 18-month follow up, consisted of tailored behavior change goals to improve diet and physical activity, weekly self-monitoring and tailored feedback via mobile technologies and monthly coaching calls from a clinic-based registered dietitian. Intervention participants lost significantly more weight than usual care at 18 months. They were also more likely to have maintained their weight than those receiving usual care (62% vs 45% $p=.02$). Shape also led to significantly greater improvements in mood, sleep, and body satisfaction independent of weight change as compared to usual care. Balance aims to help overweight adults and men and women with obesity who are not quite ready for weight loss, or who experience barriers to losing weight, to live a healthier lifestyle and prevent further weight gain. We launched recruitment for Balance in February 2017 and expect to enroll 442 patients; about one-third of which are monolingual Spanish-speakers. Balance expands what we tested in Shape by further integrating the intervention into the health center and using mobile technologies to provide social support and conserving human coaching for those patients that exhibit large weight gains. Both trials are examples of how emphasizing weight gain prevention, rather than weight loss may afford clinical benefit for patients with obesity. Because without intervention, 90% of adults will gain weight in midlife which may influence perceived weight stigma. As such, a focus on weight gain prevention is of high priority.

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Symposium 67

8:30 AM-9:45 AM

UNDERSTANDING AND LEVERAGING THE INFLUENCE OF CLOSE OTHERS ON HEALTH BELIEFS AND BEHAVIORS: INSIGHTS FROM A DYADIC PERSPECTIVE

Alexander Rothman, PhD¹, Richie L. Lenne, BA¹, Rebecca Ferrer, PhD², Katelyn Gettens, M.A.³¹University of Minnesota, Minneapolis, MN; ²National Cancer Institute/ NIH, Rockville, MD; ³University of Connecticut, New York, NY

Psychological models of health behavior have traditionally adopted an intrapersonal perspective that prioritizes specifying when and to what degree an individual’s thoughts and feelings influence her or his behavior. Although this perspective has advanced our understanding of the determinants of people’s health behavior across an array of health domains and has informed the development of effective intervention strategies, there is a growing understanding that people’s behavior is shaped by the interpersonal relationships they have with close others, whether they be spouses, parents, children, or friends. Yet, there has been limited integration of the dominant *intrapersonal* models of health behavior and advances in models of *interpersonal* influence in relationships. The speakers in this symposium are all actively pursuing innovative research programs that advance the integration of these two perspectives. Moreover, these lines of work highlight the different perspectives research groups are using to engage with these issues. First, Speaker 1 and colleagues leverage data from over 1,600 parent-adolescent dyads to demonstrate how adopting a dyadic approach to intrapersonal models such as the Theory of Planned Behavior can reveal how beliefs held by a close other influence a person’s eating and activity behavior and how these patterns of interpersonal influence are contingent on relationship dynamics. Second, Speaker 2 and colleagues leverage the same dyadic data set to delineate how the different forms of social influence strategies parents use can affect their adolescent children’s goal pursuits and, in particular, their eating and activity behavior and their weight. Third, Speaker 3 and colleagues examine the use of social influence strategies within the context of a couples-based behavioral weight loss intervention trial, with a particular focus on how spouse’s beliefs about the quality of their relationship regulates the effect that social influence strategies have on weight control behavior and weight-loss outcomes. Finally, the Chair will moderate a discussion among the speakers and the audience regarding issues that need to be addressed in order to advance the integration and application of these two theoretical perspectives.

Symposium 67A

MODELING PARENTS' AND TEENAGERS' IMPACT ON EACH OTHER'S EATING AND PHYSICAL ACTIVITY USING THE THEORY OF PLANNED BEHAVIOR

Richie L. Lenne, BA

Background: The Theory of Planned Behavior (TPB) provides an influential framework for how a person's beliefs influence her or his behavior. However, the TPB's intrapersonal perspective provides limited guidance for how the beliefs of close others affect one's behavior. We situate the TPB in a dyadic framework to examine how parents' and teenagers' beliefs about health behaviors influence not only their own behaviors (actor effects), but also each other's behaviors (partner effects). Additionally, we explore conditions under which partner effects may be most potent.

Methods: Our sample includes over 1,600 parent-teen dyads from the Family Life, Activity, Sun, Health, and Eating study conducted by the National Cancer Institute. Participants reported eating and physical activity behaviors, and indicators of attitudes, subjective norms, perceived behavioral control (PBC), and intentions for each behavior. Constructs related to parent-teen relationship dynamics were also measured.

Findings: Consistent with the TPB, path analyses showed that each individual's attitudes, norms, and PBC predicted her/his intentions, which in turn predicted her/his behaviors. We also found evidence of partner effects. Teen and parent attitudes, norms, and intentions predicted each other's intentions, and their intentions predicted each other's behaviors, above and beyond actor effects. Across behaviors, parents had a greater impact on their teens' behavior than vice versa. Finally, partner effects were moderated by relationship dynamics. For example, parents' intentions to eat well and be active had more influence on their teens' eating and physical activity behaviors when their teens' need for autonomy was supported.

Discussion: By situating the TPB in a dyadic framework, we show that a person's behavior is associated with both her/his own intentions/beliefs and those held by a close other (i.e., parent or child). These findings broaden our understanding of health behavior models and point to new targets for intervention strategies.

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Symposium 67B

PARENT INSTRUMENTALITY FOR ADOLESCENT EATING AND ACTIVITY

Dr. Rebecca Ferrer, PhD

Background: Parent-adolescent interactions have important health implications for the adolescent. Parents can be instrumental to healthy eating by purchasing fruits and vegetables or refraining from purchasing hedonic (i.e., low nutrient, high energy-dense) foods. Parents can be instrumental to healthy activity by modeling exercise behavior or by discouraging sedentary activities.

Purpose: This research leverages psychological theory on goal pursuit within relationships to investigate whether parents are instrumental to their adolescent's eating and activity.

Methods: Using data from a national sample of 1556 parent-adolescent dyads, we conducted dyadic analyses to examine whether parent instrumentality (both parent-perceived and adolescent-perceived) for healthy behaviors predicted adolescent engagement in those behaviors. Further, we examined whether there was a link between parent instrumentality and adolescent body mass index (BMI) was statistically mediated by parent instrumentality.

Results: As predicted, greater adolescent-perceived parent instrumentality was associated with greater fruit and vegetable consumption and physical activity and lower hedonic food consumption and sedentariness. Parent-perceived parent instrumentality was associated with all but hedonic food consumption. Mediation modeling suggests that variance in adolescent body mass index (BMI) is partially attributable to parent instrumentality for these behaviors.

Conclusions: We found that both visible (i.e., adolescent-perceived) parent instrumentality and invisible (i.e., parent-perceived, when controlling for adolescent-perceived) instrumentality predicted independent variance in adolescent eating and activity behaviors, and in adolescent BMI via these behaviors. These findings have implications for the promotion of healthy eating and activity patterns among adolescents. Parental instrumentality for behavior may be an important target for interventions to improve adolescent health, and interventions may be most successful in facilitating adolescent behavior change if they target both parent-perceived and adolescent-perceived parent instrumentality.

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Symposium 67C

SOCIAL CONTROL, RELATIONSHIP SATISFACTION, AND THE DYADIC SUPPORT ENVIRONMENT IN A COUPLES-BASED WEIGHT LOSS INTERVENTION

Katelyn Gettens, M.A.

Background: Spouses are key agents in health behavior change and their attempts at social control (e.g., persuasion) elicit a range of responses, both helpful and harmful. What determines responses to social control, and how these responses may impact health outcomes, are not clear. Studies have considered the impact of spousal involvement in health behavior interventions broadly (Pietromonaco et al., 2013), and adults reporting low relationship satisfaction may be more likely to report negative reactions to social control (Tucker, 2002) suggesting it is necessary to consider the quality of the dyadic relationship. This study examined the impact of relationship satisfaction on behavioral reactions to social control and weight loss outcomes among married dyads participating in a behavioral weight loss intervention. We predicted that spouses reporting higher relationship satisfaction would exhibit healthier behavioral responses to social control from partners and that healthier responses would predict greater weight loss.

Methods: Cohabiting spouses (N dyads=64) participating in a randomized controlled trial of couples-based behavioral weight loss were examined. Spouses completed questionnaires about health-related indirect social control (e.g., “I feel a sense of responsibility to my spouse to stay in good health”), behavioral reactions to social control (e.g., “I did what my spouse asked”), and relationship quality at baseline, 3, and 6 months. Weight was measured at baseline and 6 months.

Results: Analyses controlled for intervention group, gender, age, baseline indirect social control, and behavioral reactions. Higher baseline relationship satisfaction predicted less unhealthy behavioral responses to indirect social control at 3 months, including lower reported “doing nothing” ($B = -.02, p = .02$), “doing the opposite of what my spouse asked” ($B = -.02, p = .05$), and “hiding behaviors from spouse” ($B = -.03, p < .01$). Unhealthy behavioral responses at 3 months predicted lower percent weight loss at 6 months (“doing nothing”, $B = 2.15, p < .01$; “hiding the behavior”, $B = 1.57, p = .06$). Behavioral responses mediated the effect of relationship satisfaction on 6-month weight loss: “doing nothing,” $a*b = -.05, p = .03$; “hiding behaviors,” $a*b = -.04, p = .06$.

Discussion: The impact of spousal indirect social control on behavioral responses to social influence and weight loss outcomes appear to depend on the quality of the relationship. Relationship satisfaction may reduce negative reactions to indirect social control, indicating that support and influence operate differently in satisfied (versus unsatisfied) relationships. Healthier behavioral responses to indirect social control may also improve weight loss outcomes. These findings highlight the importance of the dyadic environment: simply put, the quality of the relationship matters.

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Symposium 68

8:30 AM-9:45 AM

USING IMMERSIVE VIRTUAL REALITY TO STUDY AND CHANGE HEALTH-RELATED BEHAVIOR

Megan Lewis, PhD¹, Laura K. Wagner, MPH², Susan Persky, PhD³, Patrick Bordnick, PhD⁴, William Riley, PhD⁵

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Immersive virtual reality (VR) is seeing a rapid rise in consumer popularity, but its potential to enhance health and well-being is largely untapped by researchers. Primarily discussed as a gaming and entertainment technology, it has several inherent characteristics that fill important needs in behavioral medicine research and practice. For example, VR environments can provide several benefits to researchers, including: manipulation of contextual factors via highly controlled experimental conditions, realistic environments that allow participants to practice behaviors before doing enacting them in the real world, and facilitating embodiment and immersion experiences that can support positive emotions and behavior. In addition, it provides the opportunity to collect unique behavioral data that would be impossible in real world contexts, helping researchers triangulate behavior change data. It can be flexibly applied to rigorous experimental studies, support learning of new behaviors as a training tool, and used as an outcome assessment tool. This symposium will draw on the findings and experiences of three VR research programs. These three innovative research presentations will illustrate the important potential advantages of VR technology use in arenas relevant to behavioral medicine researchers. These projects also represent different points in the lifecycle of VR tool development, from preliminary assessment, to validation, and finally to clinical application.

Symposium 68A

PRELIMINARY ASSESSMENT OF THE VIRTUAL GENETIC COUNSELOR'S OFFICE

Ms. Laura K. Wagner, MPH

Recent advances in and lower costs for genomic sequencing tests are changing the types of genomic risk information that clinicians and parents have access to related to an infant's or child's health. In addition, studying how clinicians communicate the practical benefits and risks of this information to parents is still unexplored. Few systematic opportunities to study decision-making exist outside of busy, uncontrolled clinic workflows. Although researchers have used hypothetical vignettes in surveys to study decision-making, this method lacks psychological realism.

To study parents' perceptions of the risks and benefits of genetic sequencing tests for their children, we developed the Virtual Genetic Counselor's Office (VGCO), an immersive VR environment. In the VGCO, parents hear from a genetic counselor about the risks and benefits of genetic sequencing tests. They also have the choice to learn about information that varies by age of onset and medical actionability. The VGCO allows us to maintain experimental control of the order of the presentation of risk and benefits for various types of information that parents could learn.

We will highlight a research project conducted to assess the usability and acceptability of the VGCO. This presentation will focus on the iterative framework used to develop the environment: the Define, Design, Develop, and Deploy phases. As part of the Deploy phase, 39 parents of young children completed the VGCO activity. We collected self-report data on usability, acceptability, and presence. Presence, the perception that the virtual environment is reality, is an important factor in engagement and learning. Participants reported that the interface was easy to use, and that they had few, if any, signs of physical discomfort. They reported feeling mentally present in the interaction with the genetic counselor. However, despite feeling mentally present, participants did not report feeling as physically present, for example, they did not forget about their physical surroundings. The presentation will share the lessons learned from this pilot study and provide insights into the early stages of developing VR environments for research.

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Symposium 68B

VIRTUAL REALITY FOR HEALTH BEHAVIOR MEASUREMENT: THE VR BUFFET

Susan Persky, PhD

Childhood nutrition and obesity are priority research areas and require research to understand the feeding behaviors of parents. However, child feeding is difficult to measure, particularly in laboratory settings where formative research often takes place. VR behavioral measures provide high levels of experimental control, yet place research participants in a psychologically realistic, ecologically-valid scenario, and allows automated collection of fine-grained behavioral data. In the VR buffet, parents choose a meal for their child from among a variety of foods and beverages that vary in nutrient and calorie density. Data collected include type and amount of each food selected, nutritional metrics, timing, and orderings of selections. This presentation will highlight a research project that was conducted to validate the use of the VR Buffet as a child feeding measure. In this study, the amount of food served in the VR Buffet was highly correlated with real-world serving amounts $r_s = .613, p < .0001$ for food and, $r_s = .822, p < .0001$ for beverages. In addition, food serving patterns conformed to predicted patterns based on the age and gender of the child for whom food was chosen. For example, parents chose 100 calories more for boys than girls. Findings from substantive parent feeding studies that use the VR Buffet as an outcome measure will also be presented to demonstrate its versatility and sensitivity to detect experimental effects. The Mothers' TAKE Trial used the buffet to assess calories chosen for one's child following presentation of family health history-based obesity risk information for that child. The nTech Trial assessed the influence of parental emotion and framing of a message about fruit and vegetable consumption on parents' serving of fruit and vegetables from the VR Buffet. As such, the VR Buffet is an example of an evidence-based application of VR technology to tackle challenges of behavioral measurement in a behavioral medicine research context.

Symposium 68C

VIRTUAL REALITY: THE FUTURE OF SUBSTANCE ABUSE RESEARCH AND TREATMENT

Patrick Bordnick, PhD

Envision a world where humans interact seamlessly with technology, to improve behavioral health and aid in knowledge building. This presentation will describe a mature program of research using immersive virtual reality (VR) that addresses clinical and laboratory investigations of substance abuse using technology. The scope of VR application to substance abuse involves developing and testing VR environments for alcohol, nicotine, marijuana, heroin and other behavioral disorders. Key findings indicate that significant increases in drug craving were evoked in virtual parties, bars, restaurants, and drug using environments, demonstrating that VR is a viable medium to explore relapse behaviors. Because VR is a method to study craving in virtual contexts that emulate the real world, it can also provide a foundation to use VR environments to teach coping skills and relapse prevention strategies to improve cessation rates. Our work demonstrated that coping and relapse prevention skills learned in VR decreased smoking rates and led to increased confidence to resist smoking in the real world 6-months post-trial. Data supports the theory that skills learned in virtual environments translate to actual skill use in the real world. Building upon previous research, the path forward for using VR in substance abuse and behavioral health areas will involve the use of portable smartphone based VR to bridge the gap between clinical and real world settings. Overall, VR is a novel tool that can be used to augment traditional intervention approaches and enhance therapeutic gains beyond traditional clinical settings. This research program has implications for VR as a clinical intervention tool.

Symposium 69

8:30 AM-9:45 AM

PARENT PERSPECTIVES ON HEALTHCARE DECISIONS AND HEALTH BEHAVIORS

Erin Turbitt, Ph.D.¹, Megan C. Roberts, PhD², Yelena P. Wu, PhD³, Christine Rini, PhD⁴, Jennifer L. Hay, Ph.D.⁵

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The majority of decision making research focuses on individuals making decisions about their own health; however, we know comparatively little about surrogate decision making. The most prevalent context in which surrogate decision making occurs is when parents make decisions on behalf of their child. The limited evidence available on this topic suggests that making decisions for others differs from choosing for yourself, demonstrating a need to further study surrogate decision making. This symposium will explore parental decision making in a variety of contexts, using inherited conditions as an exemplar.

Data from three different studies will be presented under the topic of parent decision making. The first presenter will describe development and novel application of the methodology best worst scaling; a choice assessment task used to elicit patient preferences in healthcare. Data from parents of children with Fragile X Syndrome (the most common inherited form of intellectual disability) include motivating and discouraging factors to enrolling their child in a clinical drug trial. The presentation will also explore decisional conflict about trial participation, and the roles of various stakeholders in the decision-making process. The second presenter will discuss results from a study with parents who have a history of melanoma and their children who are at increased risk for the disease. Qualitative and quantitative findings demonstrate that parents perceive both barriers to and facilitators of their children's melanoma preventive behaviors, and that these factors can influence reported implementation of preventive behaviors. The third presenter will discuss decision-making processes among couples asked to make a joint decision about newborn screening using genomic sequencing. Analyses will examine factors associated with decisional conflict, decision regret, and collaborative decision making, with implications for development of decision support interventions.

This symposium aims to address issues such as (1) assent or involvement of children in decision making; (2) understanding the factors that may influence decisions made by parents, children and clinicians; (3) parental decision support interventions.

Symposium 69A

PARENT DECISION MAKING IN CLINICAL DRUG TRIALS

Dr. Erin Turbitt, Ph.D.

Compared to adults, children have historically been underrepresented in drug development research. Furthermore, pediatric drug trials are more often terminated due to poor recruitment and retention of subjects. Instrumental to the recruitment process, informed consent is an ethical and legal requirement for individuals to participate in research. Because children lack the capacity to independently consent to research participation, parents play a key role in making decisions for trial participation on their behalf. Given the central role parents have in the decision to enroll their child, it is important to understand the trial decision-making process from their perspective. Delineating the motivating and discouraging factors parents weigh may improve recruitment and retention rates.

We carried out a study to assess parental decisional factors for enrolling their child into a drug trial. We focused on parents of children with the most common form of inherited intellectual disability, Fragile X Syndrome (FXS), which is associated with behavioral challenges and autism spectrum disorder. There are no FDA approved drugs to treat FXS, though recent advances in understanding the disease mechanism have led to an increase of FXS clinical drug trials.

This presentation will describe a use of the Best Worst Scaling (BWS) technique for studying decision making. BWS is a choice assessment experiment used in market research and health economics to evaluate goods and services by identifying their most and least highly valued attributes. These techniques present respondents with a range of different combinations of attributes require preference choices. We developed a BWS choice assessment task about decisional factors for drug trial participation among parents of individuals with FXS. Evidence from five sources contributed to development of the BWS task: published literature, qualitative interviews with 34 parents, method and topic expert consultations, pre-testing with clinicians and researchers, and piloting with the target population.

Data from the development of the BWS task will be presented. Findings will include a ranked list of the factors parents prioritize when deciding about entering their child into a drug trial. This presentation will also explore ease of decision making and the roles of others (i.e. family, clinicians, and affected individuals) in the decision-making process.

Enhancing our understanding of parental decision making for drug trial enrollment enables us to develop appropriate support to ensure parents make informed decisions that align with their personal values and in turn improve retention and recruitment to trials.

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Symposium 69B

BARRIERS TO AND FACILITATORS OF MELANOMA PREVENTIVE BEHAVIORS PREDICT REPORTED SUN PROTECTION IN CHILDREN WITH FAMILIAL RISK

Dr. Yelena P. Wu, PhD

Implementation of melanoma preventive behaviors during childhood is particularly important for children at elevated risk for melanoma due to family history of the disease. However, prior literature suggests that engagement in melanoma preventive behaviors can be suboptimal. Few studies have identified factors that may influence children's engagement in melanoma preventive behaviors. The current study identified parent- and child-reported barriers and facilitators to child engagement in melanoma preventive behaviors using qualitative (focus group) and quantitative (survey) methods, and examined how reported barriers and facilitators are related to engagement in preventive behaviors. Thirty-nine parents and 37 children participated in focus group discussions (6 parent, 6 child groups) and 69 parents and 63 children completed questionnaires. Qualitative results highlighted several barriers and facilitators that have not been previously described in the literature. For instance, barriers included challenges associated with implementing sun protective behaviors across different settings (e.g., at school, extracurricular activities) and tailored to children's preferences (e.g., preference for protective clothing instead of slimy feeling of sunscreen), and facilitators included receipt of healthcare provider recommendations about prevention and screening behaviors. Cross-sectional quantitative findings indicated that both parent- and child-reported barriers to child sunscreen use significantly predicted child sunscreen use ($b = -.12, p = .03$; $b = -.21, p = .04$, respectively). In addition, parent-reported barriers to child protective clothing use significantly predicted parent-reported child use of protective clothing for long-sleeved shirts and long pants ($b = -.14, p = .01$; $b = -.17, p = .005$). Parent-reported facilitators to children's long-sleeved shirt wearing significantly predicted parent-report of children's wearing of long-sleeved shirts ($b = .20, p = .04$). These findings demonstrate that at-risk children and their parents experience multiple barriers to and facilitators of children's engagement in melanoma preventive behaviors. Further, these factors (barriers and facilitators) may predict children's engagement in melanoma preventive behaviors. Interventions aiming to support children with a family history of melanoma in engaging in melanoma preventive behaviors could provide families with strategies to address their barriers and facilitators.

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Symposium 69C

DECISION MAKING IN COUPLES OFFERED GENOMIC SEQUENCING FOR NEWBORN SCREENING: OUTCOMES OF A SURROGATE, JOINT DECISION

Dr. Christine Rini, PhD

The North Carolina Newborn Exome Sequencing as Universal Screening (NC NEXUS) study is investigating whether genomic sequencing enhances the benefits of newborn screening. *Next Generation Sequencing Newborn Screening* (NGS-NBS) could identify a greater proportion of infants at risk for conditions that are actionable. We are recruiting parents with a healthy pregnancy (*well-child* cohort) and parents of children aged 0–5 diagnosed with a condition included in standard NBS or that is not currently screenable but would be a good candidate for NBS (*diagnosed* cohort). Parents are asked not only to make a surrogate decision on behalf of their child, but also to work together to make it. After each parent completes a baseline (T1) assessment, they are instructed to work together to complete an online decision aid (DA) that includes values clarification, using the DA to record a joint initial decision about whether they are interested in NGS-NBS for their child. If their decision is *yes* or *undecided*, they are invited to a clinic visit to learn more and/or consent to NGS-NBS. Each parent also completes a post-decision assessment (T2). Of 103 couples who have completed T1 and the DA to date, 47% have made an initial decision to accept NGS-NBS, 16% were undecided, and 37% declined. Of the 86 (83%) invited for the clinic visit, 60 (70%) attended and all consented to NGS-NBS. Analyses of T2 data showed little agreement between mothers' and fathers' decision regret ($r = .18, p = .13$) and only modest agreement about the difficulty of decision making (decisional conflict; $r = .40, p < .001$). Mothers reported more decision regret ($p = .02$) and decisional conflict ($p = .002$) than fathers. These outcomes did not differ across cohorts nor did they differ according to whether parents accepted or declined NGS-NBS. Mothers and fathers reported similar perceptions that their joint decision making was a positive, collaborative experience ($p = .12$). For each parent, this perception was negatively related both to their own decision regret and decisional conflict and to their partner's decision regret and decisional conflict, with only one exception. Findings suggest that parents' decisional conflict and, especially, decision regret could differ substantially and that parents' perceptions about positive collaboration in their joint decision making were related to the psychological experience of the decision making process and the decision outcome.

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Symposium 70

8:30 AM-9:45 AM

PROMOTING HEALTH ENGAGEMENT BEHAVIORS WITH UNDERSERVED POPULATIONS: PSYCHOLOGISTS AND PHYSICIANS WORKING TOGETHER

RoseAnne Illes, Florida¹, Amanda Danley, M.D.², Scott J. Nyman, Ph.D., ABPP, LP³, Andrew Champine, PsyD⁴, Erin O'Connor, PhD⁵

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Underserved populations struggle with access to resources in many healthcare areas ranging from medical/mental health services to health literacy. Often times various providers can become overwhelmed by attempting to meet the challenging needs of this population. Primary care has always been a discipline that focuses on prevention, being patient-centered, and addressing the whole person context. Recently it has been an area in which focus has turned to for further coordination of care, such as creating Patient Centered Medical Homes (PCMH) and Accountable Care Organizations (ACO).

Although these programs have placed an emphasis on quality vs revenue, it has not provided guidance on how to address the complicated needs of underserved populations. The demands that healthcare places on primary care physicians, specifically the time constraints, impacts the delivery of care to a population that needs extra support. Programs are being developed to meet the demands of working with low SES/underserved populations while assisting providers in providing appropriate patient-centered care. This symposium will present different examples of programs that were created to address this need, which include focusing on health improvement and advocacy efforts using collaborative psychological and medical providers for comprehensive approaches.

With the movement toward more integration between interdisciplinary providers and patient centered medical homes, this symposium will demonstrate examples of opportunities for psychologists and physicians to collaborate for the goal of improving healthy lifestyle management for underserved/low SES populations. The first presentation will demonstrate an example of a diabetic group visit that was created and run by resident physicians in collaboration with a health psychologist. This has a twofold purpose in that it was created to address the needs of the clinic population who often struggle with understanding diabetes management from only the 20 minute visit, in addition to assisting resident physicians with frustration of balancing desire to educate patients but under time constraints. The second will present a model of collaboration between psychologists and physician residents, within the physician's office visit, to address health behavior change for obesity and smoking. They will provide insight into physician's self-perceptions of barriers to their work with managing low SES patients on healthy lifestyle goals. The third will present a community outreach program where psychologists and resident physicians together provide screening and interventions on various health concerns including asthma, physical activity, and blood pressure.

Symposium 70A

CAN DIABETIC GROUP VISITS IMPROVE HEALTH LITERACY IN AN UNDESERVED POPULATION

Dr. Amanda Danley, M.D.

Diabetes is a significant burden in the United States of America with an estimated prevalence of 29.1 million people or 9.3% of the total population; which is associated with significant complications and increased mortality. Patient education focusing on knowledge and behaviors has shown to improve diabetic glycemic control. This management is an even greater concern in a population with low health literacy and health disparities. Group medical visits have historically been implemented to improve self-management and peer support; however in a population which has multiple barriers to chronic disease management, group visits have provided an alternative to the quick primary care visits. Our clinic population faces challenges with managing chronic diseases and struggled with gaining understanding solely from the primary care physician's traditional 20 minute visit. Physician residents in collaboration with a health psychologist created a group to address the needs of the patient population served.

The group visits have provided a twofold benefit of addressing the needs of the patients. While these groups permit residents to learn skills in facilitating groups, it provides the physicians the reward of working with patients outside of the 20 minute visit. Secondly it provides opportunity for patients to have more time with a physician and to explore aspects of diabetes management of which they may not in the traditional medical visit. The health psychologist is an attending of the program and serves as a supervisor during the visits, however inclusion of the psychologist in collaboration with the facilitators occurs throughout the visits as topics are appropriate (i.e. discussion of stress and glucose). Curriculum development and content will be discussed as factors relevant to our underserved population were included, such as learning how to pick foods when eating out, food options to buy on limited funds, and ways to make traditional meals healthier for DM management.

We conducted pre and post-test measures to identify patient outcomes and will present the findings regarding changes in perceived diabetic knowledge, empowerment, and overall management. Challenges and strengths of this experience will be discussed, which includes recruitment, patient engagement, factors unique to this population regarding DM management, patient interest, patient appreciation, and resident education on the facilitation process of group visits with patients with low health literacy.

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Symposium 70B

IMPROVING HEALTH BEHAVIORS OF UNDERSERVED PATIENTS IN THE PRIMARY CARE OFFICE: A TRANSDISCIPLINARY APPROACH

Scott J. Nyman, Ph.D., ABPP, LP

Research has highlighted the importance of patient *health engagement* and *activation* in implementing long-term healthy behaviors (Hibbard & Greene, 2013), yet the health behaviors of traditionally underserved patients are often influenced by factors such as socio-economic status (SES), housing, transportation, education, health literacy, and at times cultural customs and norms, some or all of which may impact, and even impede, engagement in healthy behaviors (Bowers, 2015; Orzech, Vivian, Huebner-Torres, Armin, & Shaw, 2012). This presentation will describe collaborative efforts between psychologists and physicians, working as a team, to address the unique health behavior needs and challenges of underserved patient populations in the primary care medical office. The presentation will address A) Collaborative patient care initiatives focused on improving patient engagement and activation regarding health-related behaviors in the primary care office and B) Medical education curricula focused on healthy behavior change designed for Family Medicine Residents. Upon conclusion of the presentation the audience will be able to utilize this information to inform their own clinical and teaching practices to better reach underserved primary care patient populations and teach medical and psychology learners evidence-based practices to increase patient health engagement and activation levels.

Our urban primary care Family Medicine residency training program contains fully licensed psychologists and physicians, as well as Psychology Postdoctoral Fellows and Family Medicine Residents, to provide outpatient care to a diverse, low SES patient population with high rates of tobacco use, obesity, sedentary lifestyle, and Type II Diabetes Mellitus, often coupled with low health literacy levels. The presentation will describe our Lifestyle Change Clinic (LCC), which was designed as a collaborative medical-psychology clinic to offer customized patient treatment planning and follow-up care to replace unhealthy behaviors with long-term health-promoting behaviors using concepts of Motivational Interviewing (M-I; Miller and Rollnick, 1991, 2002) and the Transtheoretical Model of Behavior Change (TTM: Prochaska & DiClemente, 1982; 1983; Prochaska, DiClemente, & Norcross, 1992). Our 3-year Family Medicine residency program uses a 4-week block rotation model in which residents spend a portion of 1 block / year with our Behavioral Science Department. In addition to working with us in the LCC during the rotation, we also provide a self-directed learning curriculum in each residency year with ongoing individualized follow-up discussion throughout the rotation. The presentation will describe elements of this curriculum focused on healthy behavior change with underserved patient populations.

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Symposium 70C

DELIVERING POPULATION HEALTH MEDICAL EDUCATION THROUGH COMMUNITY PARTNERSHIP: COLLABORATIONS TO SEVERE THE UNDERSERVED

Dr. Andrew Champine, PsyD

Motivation/Problem Statement: The governing body of medical education (ACGME) has realized the importance of population health approaches to address quality healthcare delivery, reduce per capita healthcare expenditures, and provide greater patient satisfaction (IHI Triple Aim). As such, current requirements for residency training often include some formalized component of population health education. In response, our medical education program, led by the efforts of clinical health psychology, devised a curriculum focusing on serving the underserved in the Flint, Michigan community. This program was created as an opportunity to meet the demands of working with underserved populations on health improvement while providing medical education on the core concepts of population health. This collaboration includes a transdisciplinary approach that combines the knowledge and expertise of clinical health psychology, family medicine, and community public health organizations.

Approach: The approach for developing a program to educate about population health with the underserved followed the *Kern's Six Step Model of Curriculum Development*. This involved clinical health psychology at an academic hospital leading networking and needs analysis with a public health organization, The Crim Fitness Foundation. Various partnership goals were generated and a formalized set of activities to serve the underserved was delineated. Activities all included some form of integration between behavioral medicine and family medicine. These activities included health improvement and advocacy efforts such as providing health education, screening and assessment, mindfulness interventions, resource development, amongst others. A continuous cycle of quality improvement examined feedback on the success of the program. Various points of evaluation examine the impact in terms of education, community engagement, and feedback from underserved populations.

Product: The final product of this project will be realized in twofold. First, the medical education curriculum provided for McLaren Flint serves as a cornerstone teaching opportunity to explore core concepts and approaches to population health. The second, is the ongoing health improvement and advocacy efforts that have a direct impact on community engagement, community partnership, and associated outcomes for the underserved.

Conclusion: Though we have experienced tremendous support and success with the development of this teaching/service platform, the program continues to evolve and grow. A discussion will be provided as to how to construct population health education using community based activities and partnerships, including strengths and weaknesses of this specific model. In addition, future quality improvement cycles, quantification of metrics, and emerging opportunities is explored in the conclusion.

Symposium 71

8:30 AM-9:45 AM

EHEALTH CARBOHYDRATE-REDUCED DIET AND LIFESTYLE PROGRAMS FOR ADULTS WITH TYPE 2 DIABETES: THREE APPROACHES

Laura Saslow, PhD¹, James McCarter, MD, PhD², Charlotte Summers, BSc³¹School of Nursing, Department of Health Behavior & Biological Sciences, University of Michigan, Ann Arbor, MI; ²Virta Health., San Francisco, CA; ³Diabetes.co.uk, Coventry, England, United Kingdom

For the past few decades, diet and lifestyle programs for adults with type 2 diabetes have included recommendations to follow a low-fat diet, often using in-person programs. In parallel, however, research has shown that carbohydrate-reduced diets may more effectively reduce body weight, improve glycemic control, and reduce hypoglycemic medications. Plus, online interventions have shown promise for encouraging these dietary changes. Several programs now have combined these approaches, teaching a carbohydrate-reduced diet to adults with type 2 diabetes supported by digital approaches.

The goals of this symposium are to:

- (1) describe two carbohydrate-reduced diets for type 2 diabetes (low-carb or ketogenic)
- (2) illustrate how three digital interventions support dietary adherence to carbohydrate-reduced diets
- (3) examine the preliminary efficacy of these carbohydrate-reduced diet digital interventions for reducing body weight, improving glycemic control, and reducing hypoglycemic medications in adults with type 2 diabetes.

The first presenter will describe a commercially available, continuous remote care medical clinic that supports patient behavior change and utilizes nutritional ketosis. The clinic includes mobile delivered remote care by a health coach and physician, online nutrition education, biometric feedback, and peer support. Results will be presented from a prospective longitudinal study.

The second speaker will describe a free, commercially available digitally supported program that teaches a low-carbohydrate diet using online video- and handout-based lessons, weight self-monitoring, dietary self-monitoring, digital social support groups, and medication management through the participants' own healthcare team. Results will be presented from a prospective longitudinal study.

The final speaker will present the development of an online program that teach a ketogenic diet using online video- and handout-based lessons, text messages, mailed cookbooks and food gifts, remote breath or urine ketone monitoring, remote weight monitoring, dietary self-monitoring, e-mail/phone coaching, digital social support groups, medication management through the participants' own healthcare team, and psychological supports based on a variety of approaches including positive affect and mindfulness.

Overall, it is our hope that the ideas and approaches presented during this symposium will provide the audience with new ways to think about diet and lifestyle interventions with adults with type 2 diabetes.

Symposium 71A

OPTIMIZING AN ONLINE VERY LOW-CARBOHYDRATE DIET AND LIFESTYLE INTERVENTION FOR ADULTS WITH TYPE 2 DIABETES

Dr. Laura Saslow, PhD

Background: Overweight adults with type 2 diabetes may benefit from advice to follow a very low-carbohydrate diet and lifestyle advice. However, the optimal intervention components necessary to support these behavioral changes in an online intervention are unclear. Using a full-factorial design, we designed a screening experiment to examine the effects of three experimental treatment components on 12-month outcomes in adults with type 2 diabetes. Our objective was to evaluate whether the addition of three intervention components (text messages, gifts of foods and books, and type of ketone meter) would improve glycemic control and percent weight lost over 12 months among adults with type 2 diabetes assigned to follow an online ad libitum very low-carbohydrate diet and lifestyle intervention.

Methods: Using 2x2x2 randomized factorial experiment, we assigned overweight or obese adults (BMI 25–45) with type 2 diabetes (HbA1c > 6.5%) on either no hypoglycemic medications or just metformin to a 12-month online intervention with three extra intervention components: (a) nearly daily versus no text messages to inform, inspire, and remind participants about the intervention's recommended behaviors (yes n=22, no n=22), (b) six versus zero bursts of mailed gifts of diet-relevant foods and/or books (yes n=21, no n=23), and (c) urine- or breath-based ketone measurement type, to provide feedback about the participants' dietary adherence (breath meter n=23, urine strips n=21). A priori we set a cutoff of efficacy of a Cohen's d of .5 or greater.

Results: We performed an interim analysis at 8 months post baseline. A total of 44 overweight adults were randomized, and 35 had outcome information (80% retention; mean±SD; full sample: 52 ± 11 y, HbA1c 8.4 ± 2.2%, 100 ± 20kg, 75% female). HbA1c reduced to 7.4 ± 2.3% (P<.001), 42% of patients achieved HbA1c <6.5% while taking no diabetes medications or metformin only, and participants lost 6.3 ± 6.6% of their baseline body weight (P<.001). Only the ketone measurement type had an impact with a Cohen's d of .5 or greater for either HbA1c or weight reduction, with urine strips outperforming the breath meter. With the breath meter HbA1c reduced by a unit of -0.5 ± 1.4% and weight reduced by 4.5 ± 6.3%; with the urine strips HbA1c reduced by a unit of -1.5 ± 1.8% and weight reduced by 8.6 ± 2.1%.

Conclusions: This research found that overall, our online intervention improved glycemic control and weight loss in adults with type 2 diabetes. Urine strips, an easy-to-use biologically based dietary adherence measurement, improved health outcomes at 8 months. Future research could investigate other intervention components to better improve outcomes and reduce dropout, so that online interventions can be effective and scalable solutions for national type 2 diabetes treatment efforts.

Symposium 71B

EFFECTIVENESS OF CONTINUOUS REMOTE CARE AND NUTRITIONAL KETOSIS FOR TYPE 2 DIABETES

James McCarter, MD, PhD

Background: Multiple studies demonstrate that reduced dietary carbohydrate can significantly improve glycemic control and reduce medication use; however, the safety and sustainability of this approach has not been tested in a large population. We evaluated if patients with type 2 diabetes (T2D) could be supported by a remote care team to maintain nutritional ketosis, improve glycemic control, reduce weight, and reduce medications over one year.

Methods: 262 adults with T2D enrolled in a prospective, longitudinal study of this intervention where they received personalized nutrition and behavioral recommendations via continuous remote care by a health coach, medication management by a physician, biometric feedback, and peer support. Primary outcomes were hemoglobin A1c (HbA1c), medication use, and weight. Secondary outcomes included blood lipids, high-sensitive C-reactive protein (hsCRP), and liver function markers.

Results: At the time of this interim analysis, 158 subjects had reached one year. 130 of 158 remained actively enrolled (82% retention). Of these, we have data from 111 patients (mean \pm SEM; 54 ± 1 y, 40 ± 1 kg-m⁻², 75% female) who have completed 1-yr testing. HbA1c at enrollment ($7.4 \pm 0.1\%$) improved to $6.1 \pm 0.1\%$ ($p < .0001$) at 1 yr, and 58% of patients achieved HbA1c $< 6.5\%$ at 1 yr while taking no diabetes medications or metformin only. Insulin was reduced or halted in 97% of users; oral glucose control medications (excluding metformin) were reduced from 51 prescriptions at baseline to 8 prescriptions at 1 yr. Weight was reduced $13.6 \pm 0.8\%$ at follow up (116 ± 2 kg to 100 ± 2 kg, $P < .0001$). At 1 yr, significant improvements in triglycerides (176 ± 13 to 132 ± 11 mg-dL⁻¹, $P = .002$), high-density lipoprotein cholesterol (46 ± 1 to 53 ± 1 mg-dL⁻¹, $P < .001$), hsCRP (7.5 ± 0.6 to 5.0 ± 0.6 mg-dL⁻¹, $P < .0001$), and alanine aminotransferase (29.7 ± 2.7 to 20.8 ± 1.2 U-L⁻¹, $P = .0011$) were achieved. Low density lipoprotein particle number (1269 ± 42 to 1218 ± 39 mmol-L⁻¹, $P = .16$) was unchanged. There were no significant adverse events attributed to the intervention.

Conclusions: These initial data demonstrate that adults with T2D can be supported by a remote care team to maintain maintain nutritional ketosis and achieve significant reductions in HbA1c, weight, and medications. Ongoing work will assess 2-yr safety, efficacy and sustainability.

Symposium 71C

A DIGITALLY DELIVERED LOW-CARBOHYDRATE TYPE 2 DIABETES SELF-MANAGEMENT PROGRAM

Charlotte Summers, BSc

Background: Type 2 diabetes is prevalent, burdensome, and costly. The standard treatment includes a low-calorie, low-fat diet. However, other research and theory suggests that a carbohydrate-restricted diet would be a more effective approach.

Objectives: Our objective was to evaluate the 1-year efficacy of Low-Carb Program (LCP), a digitally delivered, nutrition-focused, structured, automated, 10 weekly session lifestyle intervention for glycemic control and weight loss for adults with type 2 diabetes. The LCP provides behavior change support and reinforcement about carbohydrate restriction using a solution-focused approach, behavioral self-monitoring, and peer support.

Methods: We randomly selected adults with type 2 diabetes ($N = 1000$, mean \pm SD; 56 ± 15 y, HbA1c $7.8 \pm 2.1\%$, kg, 90 ± 23 kg, 59% female) who joined the Low-Carb Program (LCP) to be followed for 1 year.

Results: After 1 year, for participants with elevated baseline HbA1c ($\geq 7.5\%$), HbA1c reduced from 9.6% to 8.4% ($P < .001$) and they lost an average of 2.4% of their body weight ($P < .001$). If these participants engaged with all 10 weekly LCP modules, their HbA1c reduced from 9.2% to 7.1% ($P < .001$) and they lost an average of 6.9% of their body weight ($P < .001$). For participants with a slightly elevated baseline HbA1c (6.4–7.5%), HbA1c reduced from 6.9% to 6.2% ($P < .001$) and they lost an average of 5.1% of their body weight ($P < .001$). If these participants engaged with all 10 weekly LCP modules, their HbA1c reduced from 6.9% to 6.0% ($P < .001$) and they lost an average of 7.3% of their body weight ($P < .001$). The percentage of individuals with an HbA1c level of $< 6.5\%$ increased from 26% (257/1000) to 50% (503/1000).

Conclusions: Especially for participants who fully engage, an online program that teaches a carbohydrate-reduced diet to adults with type 2 diabetes can be effective for glycemic control and weight loss.

Symposium 72

8:30 AM-9:45 AM

FEMALE SEXUAL HEALTH AND CANCER: NEW FRONTIERS IN BEHAVIORAL RESEARCH

Kristine A. Donovan, PhD, MBA¹, Jennifer B. Reese, PhD², Clara Hungr, PhD³, Kristen M. Carpenter, PhD⁴, Sharon Bober, Ph.D.⁵

¹Moffitt Cancer Center, Tampa, FL; ²Fox Chase Cancer Center, Philadelphia, PA; ³Dana-Farber Cancer Institute, Cambridge, MA; ⁴Ohio State University, Upper Arlington, OH; ⁵Dana-Farber Cancer Institute/Harvard Medical School, Boston, MA

PURPOSE: Profound sexual dysfunction and related psychological distress are prevalent and persistent effects of treatments experienced by a majority of female cancer survivors. As the number of long-term cancer survivors continues to grow, this understudied area of women's health continues to garner more attention. New frontiers in this growing field of psychosexual oncology include examining sexual problems and their sequelae in understudied female cancer populations, developing and evaluating novel behavioral interventions for addressing cancer-related sexual problems, and understanding the mechanisms behind the effectiveness of such interventions. The purpose of this symposium is to present cutting edge data from behavioral research studies in each of these new frontiers.

METHOD: The following empirical findings will be presented: (1) Data examining the sexual health and overall quality of life (QOL) in women ($N = 21$) with life-limiting gynecological cancer who undergo pelvic exenteration surgery; (2) Results of a randomized pilot couple-based telephone intimacy enhancement intervention trial for breast cancer survivors and their partners ($N = 28$); (3) Results of mediational analyses from a sexual health intervention trial with both gynecological and breast cancer survivors ($N = 99$) focusing on the relationship between pain, distress and sexual function; and (4) Data examining self-efficacy, sexual knowledge, and emotional regulation in relation to outcomes of a psychosexual intervention trial on sexual function for ovarian cancer survivors ($N = 46$).

RESULTS: Findings highlight the unmet needs of female cancer survivors including women with advanced gynecologic cancer, underscore next steps for improving QOL for these women, demonstrate the positive effects of novel behavioral interventions for female cancer survivors across a variety of sexual health and relationship outcomes, and illuminate critical factors such as pain, distress and self-efficacy as factors that can play a role in determining the efficacy of interventions.

CONCLUSION: Novel and effective aspects of psychosexual intervention for female cancer survivors will be presented. Important and understudied areas for future research will be also be discussed by the presenters. The Discussant, an expert in clinical treatments for women with cancer-related sexual dysfunction, will comment on all studies.

Symposium 72A

SEXUAL HEALTH AFTER PELVIC EXENTERATION FOR GYNECOLOGIC CANCER

Kristine A. Donovan, PhD, MBA

Background Pelvic exenteration (PE) has been performed historically in women with gynecologic cancer for symptomatic palliation of recurrent disease. With the advent of new surgical techniques and advances in perioperative care, PE in the carefully selected patient can produce 5-year survival rates as high as 60%. The result is a growing cohort of long-term survivors dealing with the effects associated with such a radical surgery. In the current study, we sought to characterize women's sexual health after PE and examine its association with overall quality of life (QOL).

Methods In a mixed-methods study of QOL after PE, 21 women who underwent PE between 6 months and 10 years previously completed the Female Sexual Function Index (FSFI), the Sexual Self-Schema Scale for Women (SSSW) and the EORTC-Quality of Life questionnaire (EORTC-QLQ). Participants (n = 16) also participated in a semi-structured qualitative interview about their experience.

Results Participants ranged in age from 43 to 75 years (mean=58) and were a mean of 4 years post-PE. Seventy-six percent underwent a total PE and 57% had vaginal reconstruction. Mean FSFI total score was $17.6 \pm$ (range = 11.4 to 32.6). Scores for all but two women were indicative of sexual dysfunction. Partnered women and women with vaginal reconstruction reported higher FSFI total scores (Cohen's $d = .33$ for partnership status and $.49$ for reconstruction). Women attributed their dysfunction to PE itself, challenges with reconstruction, changes in physical appearance and spouse/partner concerns. Relatedly, some expressed profound changes in perceptions of one's self as a female and/or a sexual being. Self-reported global QOL was below average (42.5 ± 22 ; range=0 to 66.7) and significantly associated ($p < .05$) with the domains of sexual desire and pain and a more negative self-view.

Conclusions Findings suggest women's sexual health after PE is relatively poor. Findings also suggest targets for clinical interventions to improve sexual and psychological well-being and enhance QOL in long-term survivors. This study highlights the need for clinicians to attend not just to women's physical symptoms following this life-altering surgery but to monitor and attend to women's sexual health as well.

Symposium 72B

A RANDOMIZED PILOT TRIAL OF A COUPLE-BASED TELEPHONE INTIMACY ENHANCEMENT INTERVENTION FOR BREAST CANCER SURVIVORS AND THEIR PARTNERS

Jennifer B. Reese, PhD

PURPOSE: We previously piloted a couple-based telephone Intimacy Enhancement (IE) intervention addressing sexual concerns in colorectal cancer patients and their partners and then adapted the IE intervention for breast cancer survivors. In this randomized pilot trial, the IE intervention is compared to education control condition equating for therapist time and attention called Living Healthy Together (LHT). The objectives are to assess the feasibility and acceptability of the newly adapted IE intervention, and to generate effect sizes to inform the design of a larger trial.

METHOD: Adult females diagnosed with Stage I-III breast cancer who are 6 months – 5 years post-acute treatment, are partnered, and report some degree of sexual concerns (≥ 3 ; possible range 0–10) are eligible. Couples are randomized 2:1 to the IE or LHT condition, with stratification by age at diagnosis. Feasibility is assessed using rates of recruitment, retention, and session completion. Acceptability is assessed through the Client Satisfaction Questionnaire (CSQ-8), administered at post-intervention program. Preliminary efficacy is assessed through pre- and post-intervention measures of sexual outcomes [patient sexual distress (FSDS-R), patient and partner sexual function (FSFI, IIEF total scores), and sexual satisfaction (PROMIS Sexual Satisfaction Items), and sexual intimacy (PAIR Sexual Intimacy subscale); relationship outcomes [intimacy (PAIR Emotional subscale) and intimacy-related communication (DSCS), and relationship quality (DAS-7)]; and psychosocial outcomes [patient body image distress (BIS) and depressive and anxiety symptoms (PHQ-9, GAD-7)]. Between-group effect sizes will be calculated for study outcomes (group-wise difference in mean change scores/pooled change score SD).

RESULTS: Of 177 women screened, 91 were eligible (51%); 31 couples consented, 28 were randomized, and 1 couple is in process (31% acceptance rate; 19 to IE; 9 to LHT). Twenty-seven of the 28 randomized couples completed both study surveys (96%), and 24 completed all 4 telephone sessions (83%; 16 in IE, and 8 in LHT). CSQ-8 scores were high across both study conditions (median=29.5; possible range=8–32). Effect sizes will be presented using final data.

CONCLUSION: Findings support the feasibility and acceptability of the IE intervention for breast cancer survivors reporting sexual concerns and their intimate partners. Efficacy findings, implications, and future directions will be discussed.

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Symposium 72C

SELF-EFFICACY, KNOWLEDGE AND EMOTIONS: EFFECTS OF A SEXUAL HEALTH INTERVENTION FOR SURVIVORS OF OVARIAN CANCER

Dr. Clara Hungr, PhD

Background: Sexual dysfunction is a prevalent and distressing side effect of ovarian cancer (OC) treatment. Little is understood about how to best treat sexual dysfunction after OC treatment, with few interventions available to extend to OC survivors. To bridge this gap, a recent study demonstrated that a one-time psychosexual intervention significantly improved sexual function in OC survivors. Data from this study was analyzed to examine the roles of self-efficacy, sexual knowledge and emotional distress on improved sexual function. Patient demographic and clinical characteristics were examined as potential moderators.

Methods: 46 OC survivors with documented sexual dysfunction attended the intervention, which provided sexual health psychoeducation and mindfulness-based cognitive strategies to address emotional distress and promote sexual behavior change. Measures of sexual function, self-efficacy, sexual knowledge, & emotional distress were completed prior to and two-months following a single session group intervention. Change in these variables pre- to post-intervention were assessed using t-tests. Correlational analyses assessed direct effects on sexual function, and bootstrapping analyses evaluated the role of emotional distress as a mediator of improved sexual function. Correlations assessed moderating effects.

Results: All four variables (sexual function, self-efficacy, sexual knowledge, emotional distress) improved significantly post-intervention. Improved self-efficacy ($p = .017$) and decreased emotional distress ($p = .015$) were both directly associated with improved sexual function; while change in knowledge was not ($p = .735$). The relationship between self-efficacy and sexual function was not mediated by change in emotional distress (effect size = .04). Age, time since diagnosis, medical co-morbidity and use of maintenance chemotherapy did not moderate results.

Conclusions: Increased self-efficacy and decreased emotional distress had separate and direct influence on significantly improving sexual function in women who had been treated for OC. Moderator analyses suggest that this brief intervention would be effective for a broad range of OC survivors. Implications from these results underscore the importance of promoting self-efficacy and decreasing emotional distress in the context of delivering sexual rehabilitation after cancer.

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Symposium 72D

PAIN, DISTRESS, AND SEXUAL FUNCTION AMONG GYNECOLOGIC AND BREAST CANCER SURVIVORS: RESULTS FROM PROJECT SHARE

Kristen M. Carpenter, PhD

Sexual morbidities are among the most common and distressing sequelae of breast and gynecologic cancer treatments. Many survivors report multiple sexual concerns, including issues with desire, arousal, lubrication, orgasm, and pain with sexual activity. The present study examines the complex interrelationships among sexual pain, desire, and distress.

Participants enrolled in one of two clinical trials of a psychosexual intervention for cancer survivors and included survivors of stage I-III gynecologic ($n=70$) and breast ($n=29$) patients. Participants completed identical baseline measures assessing pelvic, sexual, and bodily pain (Pelvic Pain Assessment, Patient -PPA), sexual function (Female Sexual Function Index-FSFI; subscales for desire, arousal, orgasm, satisfaction, lubrication), and sexual distress (Female Sexual Distress Scale-FSDS). The joint significance test and bootstrapping analyses were used to assess whether sexual function mediated the relationship between pain and distress.

There were no differences in demographic, disease stage, treatment, FSFI, or FSDS scores between gynecologic and breast cancer survivors, so the groups were collapsed for analyses. Sexual pain (PPA) was associated with FSFI-orgasm ($b=-.24, p<.05$), FSFI-arousal ($b=-.25, p<.05$), and FSFI-desire ($b=-.20, p<.01$). Among the FSFI subscales and the FSDS, only desire was significantly correlated with sexual distress ($b=-2.48, p<.05$), consistent with our hypothesis that desire mediates the relationship between pain and distress. When utilizing bootstrapping analysis, the residual direct effect of PPA-sexual pain on FSDS (c') was significant ($b=-2.25, p<.001$), corroborating the joint significance test. The indirect effect of PPA-sexual pain on FSDS score ($ab=.40, 95\% \text{ CI } .05, 1.70$) suggested partial mediation ($R^2 = .24$).

Sexual pain is associated with poorer sexual function among gynecologic and breast cancer survivors, beyond other reported bodily pain. However, sexual function – namely desire – also partially mediates this relationship. Thus, it appears that the negative effect that of pain on desire is a considerable source of distress. Desire is complex, with a variety of physical, hormonal, behavioral, and psychological contributors. These results support a nuanced approach to sexual morbidity following cancer treatment and highlight the importance of considering multiple targets for intervention.

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Symposium 73

8:30 AM-9:45 AM

ADAPTATIONS OF MEANING-CENTERED PSYCHOTHERAPY FOR PARENTS BEREAVED BY CANCER, CANCER CAREGIVERS, AND LATINOS WITH CANCER

Allison Marziliano, PhD¹, Allison Applebaum, Ph.D.², Rosario Costas-Muniz, PhD², Michael A. Diefenbach, Ph.D.¹¹Northwell Health, Manhasset, NY; ²Memorial Sloan Kettering Cancer Center, New York, NY

Background Meaning-Centered Psychotherapy (MCP) is an intervention initially designed to help patients with advanced cancer sustain or enhance a sense of meaning, peace and purpose in life despite the limitations of their illness. Since its inception, MCP has demonstrated efficacy in improving not only meaning/peace, spiritual well-being and faith, but also anxiety, desire for hastened death, overall quality of life and physical symptom distress in individual and group-format randomized controlled trials. In an effort to “extend our research,” this symposium both describes the process of adapting MCP for three different populations- parents bereaved by cancer, cancer caregivers, and Latino patients with advanced cancer- and/or presents findings from randomized controlled trials (RCTs) evaluating the efficacy of these MCP adaptations. Presentation 1 evaluates the effects of Meaning-Centered Grief Therapy (MCGT), compared to supportive therapy (SP), for parents who have lost a child to cancer. Results demonstrated that both MCGT and SP led to general improvements, but MCGT led to significantly greater reductions in symptoms of Prolonged Grief Disorder (PGD), increased sense of meaning and general improvements in well-being post-intervention. Presentation 2 describes the development of the Meaning-Centered Psychotherapy-Caregivers (MCP-C) manual and the adaptation of MCP-C for delivery over the Internet. In addition, results of the RCT evaluating the efficacy of web-based MCP-C among 84 caregivers randomized to the web-based MCP-C or the waitlist control arm showed a significant differential increase in benefit finding in favor of the MCP-C arm. Presentation 3 explores the formative process of the cultural and linguistic adaptation of MCP for Latinos with advanced cancer. Utilizing a mixed-methods approach, data was collected via a survey of 64 mental health professionals who service Latino or Hispanic cancer patients, a questionnaire completed by 32 Latino patients with advanced cancer, and an in-depth interview with 24 Latino patients. Quantitative findings showed that most MCP topics were acceptable for Latino cancer patients, but discussion about having a meaningful death was less acceptable. Main qualitative findings to inform adaptation included the need to use more simple language, using words that are common to all cultures or more than one word when needed, and use of culturally-congruent metaphors.

Symposium 73A

EFFECTS OF MEANING-CENTERED GRIEF THERAPY FOR PARENTS BEREAVED BY CANCER

Dr. Allison Marziliano, PhD

Background: Parents who lose a child to cancer not only experience profound grief but also often face challenges to their sense of meaning and identity. This ongoing pilot study is evaluating Meaning Centered Grief Therapy (MCGT), a novel one-on-one psychotherapeutic intervention adapted from Meaning-Centered Psychotherapy and designed to enhance bereaved parents' sense of meaning/purpose and to reduce symptoms of prolonged grief.

Methods: Parents bereaved by cancer (target N=66; current analysis focuses on first 16 enrolled with baseline data) were randomized to receive 16 one-hour sessions of MCGT or supportive psychotherapy (SP). Blinded evaluator assessments of prolonged grief (PG-13), sense of meaning (single item assessment from McGill Quality of Life), and global improvement (Clinical Global Impression [CGI] scale) were conducted at baseline, post-intervention, and 3 months post-intervention. Effect size estimates (Cohen's d) were calculated to compare MCGT and SP on the outcome measures, centering scores by baseline values.

Results: The majority of the sample (N=16) was female (n=12, 75%), white not of Hispanic origin (n=16, 100%), and married (n=12, 75%), with an average age of 49.87 (SD=10.16). Results showed that MCGT led to greater reductions in prolonged grief symptoms (d = .76) and increases in sense of meaning (d = .92) post-intervention when compared to SP. The effects of MCGT were not maintained at the three month follow-up assessment, with no improvements in prolonged grief (d = -.09) and small effects on sense of meaning (d = .31). MCGT had a large effect on CGI global improvement scores when compared to SP post-intervention (d = .91) and at the 3-month follow-up (d = .21).

Conclusions: Both MCGT and SP led to general improvements, but MCGT led to greater reductions in prolonged grief symptoms, increased sense of meaning, and general improvements in well-being post-intervention. Efforts should focus on strengthening the intervention so that treatment gains can be maintained after the intervention concludes.

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Symposium 73B

MEANING-CENTERED PSYCHOTHERAPY FOR CANCER CAREGIVERS (MCP-C)

Dr. Allison Applebaum, Ph.D.

Background: Comprehensive care for cancer patients involves attending to the psychosocial needs of their informal caregivers (IC), among whom burden is well documented. A critical, potential driving mechanism of burden is existential distress, which includes feelings of hopelessness, demoralization, loss of personal meaning and dignity, burden towards others, and the desire for death or the decreased will to leave. Meaning-Centered Psychotherapy for Cancer Caregivers (MCP-C) was developed specifically to address this existential distress arising in the setting of caring for a patient with advanced cancer.

Method: The process of developing the original MCP-C manual and the adaptation of MCP-C for delivery over the Internet will be described. Next, the results of a randomized controlled trial evaluating the efficacy of web-based MCP-C among 84 ICs randomized to the web-based MCP-C or the waitlist control arm will be presented. Quantitative assessments of meaning, burden, anxiety, depression, benefit finding and spiritual well-being were conducted pre-intervention (T1), within 2 weeks post-intervention (T2) and 2–3 months' follow-up (T3). In-depth semi-structured interviews were conducted with a subset of participants.

Results: Forty-two caregivers were randomized to web-based MCP-C. Attrition was moderate at T2 and T3, with caregiver burden and bereavement as key causes of drop-out. At T2 and T3, some observed mean change scores and effect sizes were consistent with hypothesized trends (e.g., meaning in caregiving, benefit finding, depressive symptomatology), though no pre-post significant differences emerged between groups. However, a longitudinal mixed effects model found significant differential increases in benefit finding in favor of the MCP-C arm.

Conclusions: MCP-C shows great promise in addressing existential distress among ICs of patients with advanced cancer. In addition to an increased sense of meaning and purpose, MCP-C has the potential to protect against poor bereavement outcomes, including prolonged grief disorder and post-traumatic stress symptoms. MCP-C delivered over the Internet is feasible and acceptable. A larger study will likely establish the efficacy of web-based MCP-C, which can address unmet needs of caregivers who underutilize in-person supportive care services.

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Symposium 73C

ADAPTING MEANING-CENTERED PSYCHOTHERAPY FOR LATINOS

Dr. Rosario Costas-Muniz, PhD

Background/Purpose: Psychosocial and psychotherapeutic interventions tailored for Latino cancer patients are scarce. This study delves into the formative process of the cultural and linguistic adaptation of a psychotherapeutic intervention for Latinos with advanced cancer, Meaning Centered Psychotherapy (MCP), as well as presents considerations for the process of adapting a psychotherapeutic intervention.

Methods: The planning and adaptation model will be described. The mixed-method approach of the formative research phase included: 1) a survey of mental health professionals (n=64) who offer services to Latino or Hispanic cancer patients, 2) a questionnaire with Latino patients with advanced cancer (n=32) measuring relevant concepts of the intervention, and 3) an in-depth interview with 24 Latino patients.

Results: The Ecological Validity Model (EVM) guides the adaptation of this intervention. Results from the mixed methods will be presented for the EVM dimensions: language, persons (facilitators), content, treatment concepts, treatment goals, treatment methods or strategies, metaphors, and context. Quantitative findings showed that most goals and concepts were highly acceptable for patients and providers; however, talking about what is a meaningful death was less acceptable. The main qualitative findings were the need to adapt the intervention to include more simple definitions (i.e. legacy); change phrases that are challenging to translate and comprehend (i.e. sources of meaning); use terms with equivalent semantic meaning (i.e. attitude); use words that are common to all cultures or more than one when needed (i.e. meaning as *significadolsentido*); simplify the questions/reflections (i.e. double-barreled questions); change the metaphors for culturally-congruent metaphors, and modify content to make it responsive to Latino cultural values and norms.

Discussion: Findings show the need to adapt the intervention to achieve the aims of the intervention, while accounting for both language and cultural considerations, with special consideration to issues related to literacy, cultural and linguistic diversity, cultural values, and culturally-congruent content.

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Symposium 74

8:30 AM-9:45 AM

COUPLE-BASED INTERVENTIONS TO INCREASE PHYSICAL ACTIVITY:

Laura Porter, PhD¹, Kerri M. Winters-Stone, PhD², Kathryn I. Pollak, PhD³, Ida Griesemer, BA⁴, Laura Porter, PhD¹

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There is overwhelming evidence for the benefits of physical activity in preventing morbidity and mortality and enhancing quality of life. However, only about 20% of in the U.S. are sufficiently active, leading researchers to develop and test interventions to increase physical activity. Despite the fact that physical activity occurs in a social context, the vast majority of physical activity interventions target individual patients only. Including partners is likely to help patients initiate and maintain increases in physical activity for several reasons. First, it capitalizes on the natural social support system. Social support is a critical element in behavior change, and most people prefer support from domestic partners. Interventions that enhance naturalistic social support for physical activity are likely to increase the likelihood that individuals will be able to initiate and maintain behavior changes. Second, a couple-based intervention creates a social environment that is conducive to activity. Physical activity behaviors often occur with, or are substantially influenced by, domestic partners, as reflected in high correlations of levels of physical activity among married couples as well as correlations between partners' positive health changes. Thus, involving both patients and their partners as active participants could lead to reciprocal benefits of health improvements from exercise on each partner. Additional benefits of a couple-based intervention may include increases in physical activity among partners as well as patients, resulting in a "2-for-1" effect, and enhancements in couples' relationships.

This symposium will highlight three approaches to developing and implementing couple-based interventions for increasing physical activity: (1) a 6-month supervised strength training intervention conducted with prostate cancer survivors and their partners; (2) a four-session intervention conducted via videoconference with cancer survivors and their partners that included training in communication skills to help couples identify and implement effective social support strategies, and behavior change techniques adapted to a communal coping approach; and (3) a one-session informational intervention conducted with patients with osteoarthritis and their partner in which the primary goal was to examine between-couple differences in patterns of social support for physical activity over time. Findings identified four patterns with implications for intervention design. The discussion will highlight theoretical and practical issues around enhancing partner support for physical activity, similarities and differences among intervention approaches with regard to conceptual issues and treatment components, and recommendations for future research.

Symposium 74A

BENEFITS OF PARTNERED STRENGTH TRAINING FOR PROSTATE CANCER SURVIVORS AND SPOUSES: RESULTS FROM A RANDOMIZED CLINICAL TRIAL

Prof. Kerri M. Winters-Stone, PhD

Purpose: Prostate cancer and the treatment of prostate cancer can have a negative impact on quality of life of the patient and his spouse caregiver, but interventions rarely target the health of both partners simultaneously. We tested the feasibility and preliminary efficacy of a partnered strength training program on the physical and mental health of older prostate cancer survivors (PCS) and their spouse caregivers.

Patients and Methods: Sixty-four couples were randomly assigned to six months of partnered strength training (Exercising Together, N=32) or to usual care (UC, N=32). Couples assigned to Exercising Together attended two 1-hour group-based strength training sessions per week for 6 months. Couples perform the exercise session as training partners where each member of the couple would act as a trainer/coach while the other performed an exercise and in some cases partners performed an exercise in tandem with each other. Partners assisted one another to get into proper exercise form, monitor to ensure form was maintained, corrected form as needed and verbally encouraged completion of the set. Tandem exercises were performed by both partners simultaneously and in coordination with each other. The partnered approach to training was used to facilitate a sense of teamwork and in order to facilitate interaction and communication, both verbal and physical, between training partners during training. We hypothesized that this partnered aspect of the training program might enhance communication and relationship quality outside of the training room. Outcomes included objective measures included body composition by DXA, maximal upper and lower body muscle strength by 1-repetition maximum, and physical function by the physical performance battery (PPB). Self-reported measures included the physical and mental health summary scales and physical function and fatigue subscales of the SF-36 and self-reported physical activity.

Results: Couple retention rates were 100% for Exercising Together and 84% for UC. Median attendance of couples to Exercising Together sessions was 75%. Compared to men in UC, men in Exercising Together became stronger in the upper body ($p<0.01$) and more physically active ($p<0.01$). Compared to women in UC, women in Exercising Together increased muscle mass ($p=0.05$) and improved upper ($p<0.01$) and lower body ($p<0.01$) strength, PPB scores ($p=0.01$), and mental health ($p=0.06$).

Conclusions: This novel couples-based approach to exercise was feasible as demonstrated by strong retention and adherence to the program. Exercising Together improved several health outcomes for both PCS and their spouses indicating that dyadic approaches should be considered in cancer survivorship programs.

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Symposium 74B

MOVE 2 HEALTH: A COUPLE-BASED PHYSICAL ACTIVITY INTERVENTION FOR CANCER SURVIVORS

Kathryn I. Pollak, PhD

Background: Physical activity (PA) is an essential part of cancer survivors' treatment plan. Physical activity helps prevent recurrence and improves downstream cardiovascular risk, the cause for most deaths in cancer survivors. Additional benefits include improvements in physical function, psychological outcomes, and quality of life. However, most survivors are not sufficiently active, and prior PA interventions for cancer survivors have had mixed success. Involving partners in a PA intervention is a novel approach that could increase the efficacy of the intervention and the sustainability of effects by capitalizing on the survivor's natural social support system and addressing important interpersonal and intrapersonal factors relevant to behavior change.

Methods: We developed a home-based intervention, Move2Health, and conducted a two-arm, waitlist randomized controlled pilot study to test the intervention's feasibility and acceptability. We also explored pre-post changes in survivor and partner PA, partner support for PA, and survivor physical well being. The intervention, guided by interdependence theory, consisted of four sessions conducted via videoconference to survivors together with their partners. It provided training in communication skills to help couples identify and implement effective social support strategies, and behavior change techniques adapted to a communal coping approach.

Findings: Participants were 14 female and 6 male cancer survivors (mean age= 63.0 years, SD=8.9) and their partners (7 females and 13 males; mean age=62.8 years, SD=7.7). Nine dyads were randomized to intervention and 11 to waitlist control. 92% of randomized participants completed post-intervention surveys, and 78% dyads assigned to the intervention arm completed all four sessions. Most survivors and partners reported they would recommend the program to others, with 67% and 78% reporting 4 or 5 on this item, respectively. Mean difference scores suggested that participants in the intervention arm tended to report greater improvements in PA, partner support, and physical well being than those in the control arm.

Discussion: These preliminary findings suggest that a couple-based intervention may be a promising approach to increasing PA in cancer survivors. We will discuss recommendations for conducting a larger study to test the efficacy of the intervention.

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Symposium 74C

A QUALITATIVE STUDY OF BETWEEN-COUPLE DIFFERENCES IN PATTERNS OF SOCIAL SUPPORT: IMPLICATIONS FOR INTERVENTIONS

Ida Griesemer, BA

Background: Social support from a spouse or partner can motivate people to engage in physical activity (PA); however, couples approach exchanging social support for PA in different ways. These between-couple differences are important for designing couples-focused PA interventions that succeed in helping people initiate lasting changes in PA.

Purpose: This study aimed to elucidate relationship dynamics in provision and receipt of support for PA in couples, with the goal of informing targeted intervention strategies that effectively leverage couple characteristics to increase support for PA.

Methods: We conducted a qualitative study of couples who completed a longitudinal study investigating differences in couples' social support for PA. The sample consisted of people with osteoarthritis who were not meeting recommendations for PA and their cohabiting partners ($N=19$ couples). We conducted in-depth semi-structured telephone interviews with participants and analyzed transcripts using a narrative analysis process.

Results: The sample was 79% non-Hispanic White with a mean age of 62 years. We identified two continua in the data: 1) participants' attitudes about working with their partner to be more active (highly positive to highly negative) and 2) couples' narrative concordance (high to low shared reality between partners). We developed a couple typology with four categories: "Working together works" (positive attitudes about working together to increase PA/high shared reality; $n=4$ couples), "Doing our own thing" (range of attitudes about working together, with practical and preferential barriers/high shared reality; $n=5$ couples), "Conscious conflict" (discrepant attitudes/high shared reality; $n=5$ couples), and "Different realities" (discrepant attitudes/low shared reality; $n=5$ couples). We describe examples of each couple type.

Discussion: There are notable differences in couples' attitudes about working together to be more active and the level of couples' shared reality around those attitudes. These differences result in four patterns of working together to become more active that may require different intervention approaches. Future research should investigate implications of this typology for the efficacy of PA interventions and, if warranted, develop methods for screening to identify different types of couples and offer intervention approaches that meet their specific needs.

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Symposium 75

8:30 AM-9:45 AM

EXTENDING THE REACH OF PSYCHOLOGICAL INTERVENTIONS FOR CHRONIC PAIN: INNOVATIVE METHODS FOR INCREASING UTILIZATION

Sara N. Edmond, PhD¹, Amy Wachholtz, PhD², Tamara J. Somers, PhD³, Sara N. Edmond, PhD¹, Robert D. Kerns, PhD⁴¹VA Connecticut Healthcare System, West Haven, CT; ²University of Colorado Denver, Denver, CO; ³Duke University Medical Center, Durham, NC; ⁴Yale University, West Haven, CT

A growing number of non-pharmacological approaches for the management of chronic pain have demonstrated at least modest evidence of efficacy, and for some, there is emerging evidence of their effectiveness in relatively large scale trials. These include approaches that can be categorized as psychological or behavioral in nature and include teaching patients skills to cope with chronic pain (e.g., cognitive-behavioral therapy [CBT], biofeedback, mindfulness meditation). Despite the body of evidence for these approaches, psychological and behavioral interventions to manage chronic pain are often underutilized, and several barriers to utilization of these treatments exist. Barriers to utilization include access to care factors such as a shortage of providers, travel related problems for in person services, and costs (e.g., cost of travel, cost of co-pays, lack of insurance coverage) as well as patient factors such as patient adherence and attendance, economic or cultural barriers, lack of understanding about the rationale for treatment, or dual diagnoses that may interfere with treatment engagement. It is critical for researchers and healthcare providers to collaborate and discover overcoming these barriers in order to engage more patients in evidenced-based interventions for chronic pain. This symposium will provide three examples of ways that we can extend the reach of psychological treatment for chronic pain. First, we will hear about a treatment that is tailored to meet the needs of patients with chronic pain and comorbid opioid use disorders using psychophysiology. Second, we will hear about the development and pilot testing of an mHealth intervention for patients with cancer and pain. Finally, we will hear about the development of an intervention designed to address chronic pain in the context of a telephone-based smoking cessation protocol. By using targeted psychotherapy techniques, using mHealth technologies, and/or developing integrated treatments for patients with dual diagnoses, we can begin to extend the reach of chronic pain treatment to a wider range of patients.

Symposium 75A

USING PSYCHOPHYSIOLOGY NEEDS TO INFORM TREATMENT DEVELOPMENT FOR COMORBID PAIN AND OPIOID ADDICTION

Dr. Amy Wachholtz, PhD

Introduction: It is critical to develop psychotherapy interventions to improve treatment for patients with comorbid opioid addiction and pain (COAP); but getting patients to attend those treatments is even more important. Understanding factors that increase patient adherence and attendance are important along with strategies targeted to address each of those issues.

Method: In developing a treatment for COAP patients we integrated techniques and assessed (qualitatively and quantitatively) for strategies that encouraged ongoing treatment participation. COAP participants (N=14) on medication assisted treatment completing Stage 1A pilot STOP (Self-regulation Therapy for Opioid addiction and Pain) was used to identify treatment needs for this specific population, factors that increased attendance at sessions, adherence to treatment recommendations, and improved outcomes. Qualitative analysis identified themes in responses to short answer questions and quantitative analyses used ANOVA and correlation data.

Results: STOP is a novel 90-minute 12-week rolling-entry group therapy intervention based on the findings of a previous study identifying psycho-physiological needs of patients with comorbid pain and opioid addiction that can be seamlessly integrated into a community addiction treatment clinic. STOP had extremely high attendance rate (80%), urine toxicology showed no illicit drug use after week 8, and active patient engagement. Patients reported the in-session visual aids, applicable information about pain psychology, take home worksheets, biodots for take home relaxation practice to increase salience of the weekly topics, and learning to apply the therapy tools. Participants indicated having unique tools to immediately counteract physiological activation during a pain flare or craving. Instrumentally, participants reported that small weekly payments to cover transportation costs in addition to “banking” the larger weekly amount until the end of the study kept them attending the sessions. While not a fully powered study, quantitative data analysis from pre-intervention to a 3 month followup did show significant functional improvement ($F(1,12)=45.82;p<.001$) and decreased pain severity levels ($F(1,12)=37.62;p<.01$). Discussion: By using targeted psychotherapy techniques that were developed to directly respond to the needs identified by a thorough psycho-physiological assessment of COAP patients, therapy is more likely to maintain participant engagement and improve treatment outcomes.

Symposium 75B

DEVELOPMENT AND PILOT TESTING OF AN MHEALTH BEHAVIORAL CANCER PAIN PROTOCOL FOR MEDICALLY UNDERSERVED COMMUNITIES

Dr. Tamara J. Somers, PhD

Cancer patients in medically underserved areas (i.e., shortage of providers, services, and economic or cultural barriers to healthcare) report inadequate pain management and more negative pain-related outcomes. Women with breast cancer in these areas are particularly vulnerable to pain; they may be diagnosed at a later stage, increasing risk factors for pain. Behavioral cancer pain interventions can help with pain management. However, persistent barriers (e.g., transportation) inhibit the use of these interventions in medically underserved areas. We thus developed (phase 1) and pilot tested (phase 2) a mobile-health (mHealth) Pain Coping Skills Training protocol (mPCST) tailored for women with breast cancer in medically underserved areas (mPCST-Community). In phase 1, patient focus groups were conducted. Participants ($N=19$) were women (M age=60; 53% African American; 75% no college degree) with breast cancer and pain in medically underserved areas. Major themes were used to refine the intervention, including: bothersome pain-related fatigue (e.g., added content on fatigue); challenges with technology (e.g., created clear instructions with illustrations); and lack of psychosocial services (e.g., increased content focused on psychosocial support). In phase 2, we tested feasibility and acceptability of the mPCST-Community intervention in 20 women (M age=58; 75% African American; 75% no college degree) with breast cancer and pain in medically underserved areas. Feasibility was demonstrated by meeting planned accrual ($N=20$ in 10 months), low attrition (90% completion), and excellent adherence (90% completed all sessions). Acceptability was demonstrated by high satisfaction ratings ($M=3.7/4.0$). Data suggest that mPCST-Community had benefits for participants, with significant improvement in pre- to post-intervention pain severity scores (Hedges' $g=0.57$, 95%CI [0.10, 1.08], $p=0.01$), pain interference (Hedges' $g=0.62$, 95%CI [0.12, 1.16], $p=0.01$), and self-efficacy for pain management (Hedges' $g=0.98$, 95%CI [0.37, 1.66], $p<0.01$). Results suggest that an mPCST intervention designed for breast cancer patients in medically underserved areas is feasible, acceptable, and likely to lead to improvement in pain-related outcomes. Appropriately adapted mHealth technologies may provide an avenue to reach underserved patients and implement behavioral interventions to improve pain management in this vulnerable population.

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Symposium 75C

DEVELOPMENT AND INITIAL TESTING OF AN INTEGRATED PAIN AND SMOKING INTERVENTION

Sara N. Edmond, PhD

Cigarette smoking represents the leading precipitant of preventable death in the United States. It is linked to the development and progression of many chronic painful conditions including arthritis and back pain. Among persons with pain, concomitant cigarette smoking is associated with poorer pain outcomes, namely, greater pain intensity and pain-related functional impairment. Furthermore, smokers with chronic pain report lower self-efficacy to quit and less successful quit attempts; some smokers even report using cigarettes to cope with pain. Prior research has posited a model of pain and smoking wherein biopsychosocial factors associated with both mutually maintain a feedback loop that promotes more pain and increased smoking. Given established associations between smoking and chronic pain, efforts to integrate evidence based pain coping skills into standard smoking cessation protocols have the potential to increase quit rates while simultaneously improving pain outcomes. Such an initiative is apt to be particularly beneficial within the Veterans Health Administration (VHA) where rates of smoking and pain each exceed those observed in the general population and where 40–50% of Veterans with pain also report smoking. Consequently, a cognitive behavioral intervention integrating these elements of evidence-based behavioral pain and smoking interventions was developed for Veteran smokers with chronic pain. Because uptake of smoking cessation and behavioral pain self-management programs are often limited by time and travel, the intervention is designed to be brief (5 sessions) and delivered via telephone in order to optimize reach. A small feasibility pilot ($n=8$), tested this brief Pain And Smoking Study (PASS) protocol. Results were promising and they have informed a recently launched randomized controlled VHA Health Services Research & Development comparative effectiveness trial wherein PASS is measured against standard smoking cessation telephone counseling in a sample of Veteran smokers with chronic pain. This presentation will describe the rationale and development of the integrated cognitive behavioral intervention which includes a physical activity component, highlight the strategies utilized to promote uptake and reach, define optimal outcomes, and summarize the sample to date. Finally it will relay preliminary lessons learned from our efforts to extend the reach of evidence-based pain coping strategies by integrating them into smoking cessation interventions.

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Symposium 76

8:30 AM-9:45 AM

“MAKING WEIGHT” AND PTSD: HOW MILITARY EXPERIENCES INFLUENCE EATING AND WEIGHT IN VETERANS

Lindsey Dorflinger, Ph.D.¹, Robin M. Masheb, Ph.D.², Niloofar Afari, Ph.D.³, Jessica Breland, Ph.D.⁴

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It has become clear that disordered eating may be more prevalent among military personnel and Veterans than the general US population. There has been increased effort to understand how the military experience shapes and influences the attitudes and behaviors that military personnel may have engaged in during their service, and how these experiences then impact eating behavior later in life. The objective of this symposium is to provide insight and understanding into the pathways between military service and disordered eating behaviors. Each presenter will report on a timely and relevant aspect of the relationship between military service and eating pathology based upon quantitative and qualitative data collected from Veteran users of the Veterans Health Administration (VHA). The first presenter, Dr. Dorflinger, will present findings on the relationship between Post-Traumatic Stress Disorder (PTSD) and disordered eating behaviors among Veterans seeking weight management services at the VHA. The next presenter, Dr. Masheb, will discuss the development of a new scale, the Making Weight Inventory, used to measure eating disordered behaviors used to meet military weight requirements, and how these practices relate to eating disorder pathology and weight in Veterans. Finally, Dr. Breland will discuss qualitative findings regarding the relationship between pressure to meet military weight and eating habits among women Veterans. The symposium Discussant will direct a conversation about how to move forward with research in this area so that we may reduce and/or prevent the adoption of disordered eating behaviors that can result from military experiences.

Symposium 76A

THE RELATIONSHIP BETWEEN PTSD AND DISORDERED EATING BEHAVIORS AMONG VETERANS ENROLLING IN TREATMENT FOR OBESITY

Lindsey Dorflinger, Ph.D.

Treating overweight and obesity among Veterans is a high priority for the Veterans Health Administration (VHA) given that the rate of overweight/obesity among Veterans treated within VHA is approaching 80%. PTSD is also a significant concern among Veterans treated within VHA, and is associated with higher rates of overweight/obesity among Veterans, as well as with disordered eating contributing to weight gain among military service members. Several studies have reported significant associations between PTSD and eating disorders. While disordered eating behaviors such as emotional eating and night eating are not formal diagnoses these behaviors, are important to study given their potential to contribute to weight gain and/or impede weight loss efforts among Veterans. The current study therefore examines night eating and emotional eating, and their relationships to PTSD, among Veterans enrolling in treatment for obesity. The sample consisted of 126 veterans referred to the MOVE! weight management program at VA Connecticut Healthcare System. Veterans completed questionnaire batteries during orientation sessions during which they learned about the program and options for participation. All participants completed measures assessing demographic characteristics, PTSD screening and symptoms, emotional eating, night eating syndrome (NES), and insomnia. Both emotional eating and night eating were common among participants and were associated with higher BMI. Participants screening positive for PTSD reported more frequent emotional overeating than those screening negative for all emotions (all p 's < .01). Higher scores on the PTSD screener were also associated with more frequent emotional eating (p < .001). Participants screening positive for PTSD were significantly more likely to screen positive for NES and to endorse eating in order to return to sleep after waking at night than those screening negative for PTSD (p 's < .01). However, when controlling for presence of insomnia, the relationship between NES and PTSD was no longer significant. Findings suggest that both emotional eating and NES are common among Veterans seeking weight management services, particularly among those with PTSD, and that Veterans with PTSD may attempt to cope with difficult emotions and insomnia by eating. Given the increasing rates of obesity and related comorbidities among Veterans, these findings have important implications for treating obesity among Veterans with PTSD.

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Symposium 76B

DEVELOPMENT OF THE MAKING WEIGHT INVENTORY: ASSESSING EATING DISORDER PATHOLOGY TO MEET MILITARY WEIGHT REQUIREMENTS

Robin M. Masheb, Ph.D.

Objective: To develop a measure of maladaptive eating behaviors provoked by pressure to meet military weight requirements (“making weight”).

Methods: Participants were Veterans ($n = 114$, mean age 61.8, mean BMI 38.0, 91.2% male, 75.2% Caucasian) with overweight/obesity who attended MOVE! orientation sessions at VA Connecticut Healthcare System for weight management treatment. The Making Weight Inventory, designed specifically for this study, was administered alongside validated measures of eating behavior (Eating Disorder Examination-Questionnaire, Yale Emotional Overeating Questionnaire, Night Eating Questionnaire, and Yale Food Addiction Scale) and mental health. The Making Weight Inventory asks, “When you were in service, how frequently did you use the following to make weight?” Eating disordered behaviors (vomiting, laxatives, diuretics, fasting/skipping meals, excessive exercise, and sauna/rubber suit) intended to counteract the effects of food intake/weight gain were rated on a scale from 0 (never) to 6 (always).

Results: Thirty-six participants (31.6%) engaged in a minimum of one making weight behavior at least some of the time. The most frequently engaged in compensatory behavior was excessive exercise (25.4%), followed by fasting/skipping meals (17.5%), sauna/rubber suit (9.6%), laxatives (7.9%), diuretics (4.4%), and vomiting (1.8%). Participants screening positive for making weight behaviors reported significantly greater shape concern ($F = 22.1$, $p < .001$), weight concern ($F = 33.4$, $p < .001$), emotional overeating ($F = 22.5$, $p < .001$), night eating ($F = 6.3$, $p = .014$), food addiction ($F = 12.3$, $p = .001$), insomnia ($F = 14.6$, $p < .001$), symptoms of depression ($F = 8.4$, $p = .004$), and PTSD ($F = 11.7$, $p = .001$) than patients screening negative for these behaviors. There were no differences between the two groups on current BMI or alcohol misuse.

Conclusion: Nearly one-third of veterans with overweight/obesity screened positive for engaging in compensatory behaviors to make weight during their service. Findings from the present study support the construct validity of the Making Weight Inventory and provide evidence that maladaptive eating behaviors during military service are related to eating pathology and mental health after service. More research is needed to understand which aspects of military life might elevate risk for disordered eating so that preventative efforts may begin before Veterans are struggling with their weight.

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Symposium 76C

UNDER PRESSURE: WOMEN VETERANS' VOICES ON MAKING WEIGHT

Jessica Breland, PhD

Background. Almost 80% of veterans using the Veterans Health Administration (VHA) are overweight or obese. This may be partly due to the fact that military service exposes people to numerous stressors that affect eating habits. Most research in this area focuses on the role of traumatic experiences, but emerging evidence suggests pressure to meet military weight requirements ("making weight") may also play an important role.

Methods. To understand relationships between disordered eating and military service and to generate hypotheses for future work, we conducted five focus groups and two dyadic interviews with women at a VHA medical center between spring 2013 and fall 2014. We used inductive and deductive coding of transcripts to identify common themes. The present results focus on the relationship between eating habits and making weight.

Results. The 20 women participating in this study had a mean age of 48 years (SD=15) and came from diverse racial/ethnic groups – nine (45%) reported White race; four (20%) reported Black race; one (5%) reported Asian-American race; and six (30%) reported their race as "Other". Women independently brought up making weight as a stressor that affected daily eating habits and led to various forms of disordered eating, including unhealthy restriction and compensatory behaviors to reduce weight before being weighed. In some cases, women described this restriction as leading to a lasting pattern of restriction and binge eating. Participants felt that pressure to make weight was especially strong for women, given the general difficulty of being a woman in predominantly male military settings and the short amount of time given to lose weight after pregnancy. Most women said they did not feel supported in weight management efforts during military service.

Conclusions. Women veterans reported considerable stress related to meeting military weight requirements, which some women said led to disordered eating. Combined with findings from past quantitative work, the present results provide additional support for the hypothesis that pressure to make weight negatively affects health. There is a need for additional work in this area, including investigating whether resources to facilitate healthy eating and weight management, particularly for women around pregnancy, improve health outcomes among military personnel and veterans.

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Symposium 77

8:30 AM-9:45 AM

SPIRITUALITY MAY INFLUENCE HEALTH THROUGH HEALTH BEHAVIORS: AN UNDERSTUDIED BUT POTENTIALLY KEY PATHWAY

Crystal L. Park, PhD¹, Cheryl L. Holt, PhD², Crystal L. Park, PhD¹, Crystal Y. Lumpkins, PhD³, Karen HK. Yearly, PhD⁴

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Religiousness and spirituality (R/S) have typically been found to relate to better mental and physical well-being in many general populations samples as well as in those of people dealing with specific health conditions (see Koenig, 2012, for a review). Multiple pathways through which R/S may influence physical health have been proposed, including increased social support, better immune functioning, lower cardiac reactivity, and other biopsychosocial mechanisms. However, one oft-proposed pathway, enhanced engagement in health behaviors, has seldom been examined aside from studies noting the health prescriptions and proscriptions of specific religious denominations. This symposium features three studies that highlight this potentially key pathway. In the first presentation, Cheryl Holt will summarize the findings of a large longitudinal study with a national probability sample of African-Americans. This study tested a sophisticated theoretical model of mediators (e.g., social support, coping, social capital) of the relationship between religious involvement and a host of health behaviors including diet, physical activity, cancer screenings, and alcohol and tobacco use. She will conclude with practice recommendations based upon these findings. In the second presentation, Crystal Park will present results of a longitudinal study of 191 people living with congestive heart failure. Different dimensions of religiousness and spirituality were found to predict different aspects of health behavior, including treatment adherence, diet, physical activity, sleep and alcohol use one year later. In the third study, Crystal Lumpkins will present results of a randomized cluster trial to promote colorectal screening in African-American churches with multimodal interventions based partly on religious capital. The promising results will be described and implications for future research and implementation will be described. Our discussant, Kevin Masters, will integrate themes across these studies, highlighting implications for potentiating individuals' own religiousness and spirituality to improve multiple health behaviors.

Symposium 77A

RELIGION AND HEALTH: RECOMMENDATIONS FOR PRACTICE FROM A LONGITUDINAL NATIONAL STUDY OF AFRICAN AMERICAN MEN AND WOMEN

Dr. Cheryl L. Holt, PhD

The Religion and Health in African Americans (RHIAA) study aimed to: 1) empirically test a theoretical model of mediators (e.g., social support, coping, social capital) of the relationship between religious involvement and health behaviors and outcomes longitudinally in a national probability sample of healthy, African American adults, and 2) develop recommendations for practice based upon the findings. Findings from aim 1 will be reviewed as well as implications on how best to integrate relevant religion-health mediators into health promotion activities for African Americans. Mediators between religious involvement (beliefs and behaviors) and health-related outcomes were analyzed longitudinally among N=766 participants who completed waves 1–3 over a 5-year period. In a cross-lagged panel analysis of religious involvement and health over time, religious beliefs predicted better physical and mental health outcomes at wave 2, while health did not significantly predict changes in religious involvement. This finding helped rule out the possibility of reverse causality. In longitudinal mediation analysis, positive religious support mediated the relationship between religious behaviors and fewer depressive symptoms and less heavy drinking over time. No longitudinal mediational effect was found between religious coping and the outcomes. Previous cross-sectional analyses of the RHIAA sample indicated perceived religious influence on health behaviors, belief in illness as punishment, and religious coping mediated the relationship between religious beliefs and more fruit and vegetable intake and less smoking and alcohol use. Social support, religious influence, and illness as punishment explained the relationship between religious behaviors and better physical and emotional functioning, fewer depressive symptoms and healthy diet, smoking, and alcohol use. Negative religious coping influenced the relationship between religious beliefs and greater alcohol use and illness as punishment explained the relationship between religious behaviors and higher binge drinking. These findings describe the explanatory role of religious involvement in health-related outcomes in African American men and women. We discuss implications for health promotion activities for African Americans. The current findings suggest that targeting specific attributes of religious involvement could improve the impact of health promotion activities, including those delivered in faith-based settings.

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Symposium 77B

DIMENSIONS OF RELIGION AND SPIRITUALITY AS DETERMINANTS OF HEALTH BEHAVIOR AND ADHERENCE IN HEART FAILURE PATIENTS

Crystal L. Park, PhD

Although researchers have often suggested that some of the well-documented associations between religiousness/spirituality (R/S) and health may be due to the influences R/S exerts on individuals' health behaviors, little research has empirically evaluated these findings. Such links may be particularly important in the context of older adults living with serious illnesses, who may have fewer available resources to help them cope. The present study investigated links between R/S and health behaviors in a sample of older adults living with a life-limiting illness. A sample of 191 congestive heart failure (CHF) patients (64% male; 82% white; *M* age = 68.6 years) completed questionnaires at two time periods, one year apart, assessing five dimensions of R/S (service attendance, private prayer, daily spiritual experience, spiritual well-being and spiritual struggle) and five health behaviors (diet, exercise, sleep, alcohol use, and adherence). Results of hierarchical multiple regression analyses controlling for age and education indicated that higher consumption of fruits and vegetables, sleep, alcohol use, and adherence were positively associated with most of the R/S variables, especially FACIT meaning/peace. Spiritual struggle was inversely related to most measured health behaviors, with the exception of frequency of moderate/vigorous physical activity, which was only associated with FACIT-meaning/peace. These results suggest that R/S has complex but potentially important associations with health behaviors in CHF patients. Further, different dimensions have different effects and strengths. More research is needed to understand these relationships and to determine whether and how different dimensions of R/S may play useful roles in lifestyle change interventions.

Symposium 77C

IT'S TIME TO A.C.T.: ASSESSING A HEALTH COMMUNICATION PILOT INTERVENTION TO IMPACT CANCER SCREENING AMONG FAITH COMMUNITIES

Dr. Crystal Y. Lumpkins, PhD

Background: Colorectal cancer (CRC) screening among African Americans is increasing however these rates remain disproportionate when compared to all other racial and ethnic groups in the U.S. This study describes the development of the pilot intervention, study design and baseline characteristics. Social marketing principles and the socio-ecological model were used to implement the intervention and the theory of planned behavior and religious and spiritual capital guided construction of intervention messages.

Method: The study followed a cluster randomized design where 8 churches were grouped into either an intervention (n=4) (CRC tailored) or control arm (n=4) (standard information). Church members who were 45; not up to date with CRC screening and who had no other CRC related symptoms (e.g. blood in stool, first degree relative with CRC prior to the age of 60) were eligible for the study. The protocol included a standard procedure to measure baseline characteristics but also to disseminate health communication. Primary outcome measure was change in CRC screening completion with a FIT (Fecal Immunochemical Test) kit from baseline to 6 months. The secondary outcome measure was CRC knowledge at baseline to follow up at 6 months. Members from the faith and research communities followed a CBPR approach and collaborated on recruitment, research design, stimulus material development, training of church health promotion workers (CHPWs) for the pilot intervention.

Results: Researchers and faith-based community members successfully collaborated to enroll church members and individuals affiliated with participating churches (n=157) across the bi-state area of Kansas and Missouri. The sample was mostly female (77%), married (40%), Baptist (52%) or Non-Denominational (21%); the largest church congregation size was more than 2,500 and included 27% of the study population. At pre-screening, more than half (62%) indicated that they did not know the recommended age to begin screening. At baseline 78.4% indicated during the next 4–6 weeks that they were *extremely likely* to complete a stool test and to mail it in; in addition, 15.4% of the sample responded that they were *quite likely* to complete and return the stool test. The number of kits returned (n=122) surpassed the study goal (80.2%).

Conclusion: A high percentage of participants from both arms of the pilot intervention study reported they were *extremely likely* or *quite likely* to complete and return a FIT at baseline. While we have demonstrated the feasibility of developing a faith-based pilot intervention study and recruiting individuals from faith-based populations, there were fidelity issues and thus lessons learned for conducting the larger randomized controlled trial and future RCT (randomized controlled trials) with faith communities following a CBPR approach.

Symposium 78

8:30 AM-9:45 AM

THE ROLE OF SEXUAL COMPULSIVITY IN HIV RISK AND MENTAL HEALTH

Jeffrey T. Parsons, PhD¹, Brett M. Millar, PhD², Matthew Wachman, BA³, H. Jonathon Rendina, PhD, MPH¹¹Hunter College of the City University of New York (CUNY), New York, NY; ²Graduate Center CUNY, New York, NY; ³Center for HIV Educational Studies and Training, New York, NY

Sexual compulsivity—the experience of compulsive sexual urges, thoughts, or behaviors which interfere with personal, interpersonal, or vocational pursuits—has received considerable attention in recent decades. In relation to HIV-positive gay and bisexual men, sexual compulsivity has been linked with numerous adverse behavioral and mental health outcomes—and these links to poorer HIV-related health, increased sexual transmission risk rates, greater substance use problems, and heightened mental health distress highlight its importance in efforts to combat the HIV epidemic. A greater understanding of sexual compulsivity and of intervention efforts to address it in the context of its behavioral and mental health correlates is required to extend the reach of public health and psychology researchers to help individuals struggling with sexual compulsivity. The papers in this symposium present three approaches to empirically investigating links between sexual compulsivity and health for HIV-positive gay and bisexual men. The first paper documents longitudinal links between sexual compulsivity and subsequent HIV transmission risk behaviors measured three months later (here, condomless sex, alcohol use with sex, and suboptimal medication adherence) in a national sample of 807 HIV-positive gay and bisexual men. The second paper reports on 337 highly sexually-active gay and bisexual men and uncovers substantially higher rates of psychiatric comorbidities for those who report sexual compulsivity, particularly past trauma. The third paper presents the development of and initial findings from a comprehensive intervention (combining cognitive behavioral therapy and motivational interviewing techniques to improve emotion regulation and reduce minority stress) to address sexual compulsivity in connection with substance use problems and sexual transmission risk behaviors for HIV-positive gay and bisexual men. Together, these three presentations illustrate the importance of addressing sexual compulsivity in attempts to combat the HIV epidemic and to improve the physical, psychological, and behavioral health of gay and bisexual men. Following these three talks, the Discussant will highlight the etiologic role of minority stress, shame, and emotion dysregulation in sexual compulsivity, and describe ongoing efforts to intervene on sexual compulsivity and to reduce its downstream effects on a variety of health outcomes.

Symposium 78A

TAILORING AND REFINING AN INTERVENTION TO ADDRESS SEXUAL COMPULSIVITY AND MENTAL HEALTH AMONG HIV-POSITIVE GAY AND BISEXUAL MEN

Dr. Jeffrey T. Parsons, PhD

Background: Sexual compulsivity has been consistently linked with a range of adverse mental health and behavioral outcomes (including HIV sexual risk and HIV seroconversion) in gay and bisexual men (GBM) for over 20 years, and yet there are still no empirically validated treatments. Accordingly, interventions aimed at gay and bisexual men addressing sexual compulsivity remain a priority. We tested the initial effectiveness of a targeted, manualized intervention combining Cognitive Behavioral Therapy (CBT) and Motivational Interviewing (MI) with a focus on sexual compulsivity, emotion regulation, and substance use, in a sample of GBM reporting problems with sexual compulsivity.

Method: The initial 10-session intervention was tested with 11 HIV-positive GBM, and a revised 8 session intervention was tested with an additional 6 men. Data from the 17 participants were analyzed utilizing mixed models to measure treatment gains in various psychosocial and behavioral outcomes from baseline to a post-treatment 3-month assessment: depression, anxiety, emotion dysregulation, sexual compulsivity, number of days of club drug use, number of total sex partners, and number of HIV-negative sex partners.

Results: Participants had a mean age of 37.9 years (range: 24–56) and were largely GBM of color. Significant treatment gains were made from BL to 3M in key mental health outcomes. On average: depression went from 28.2 to 21.6 ($b=6.65$, $p=.01$); anxiety went from 8.5 to 5.6 ($b=2.94$, $p=.01$); emotion dysregulation went from 105.4 to 94.0 ($b=11.35$, $p=.02$); and sexual compulsivity went from 28.1 to 23.9 ($b=4.24$, $p=.05$). Number of club drug days decreased from 5.6 to 2.4 ($b=3.2$, $p=.05$), number of total sex partners decreased from 7.5 to 4.3 ($b=3.3$, $p=.01$), and number of HIV-negative sex partners decreased from 5.8 to 3.3 ($b=2.6$, $p=.03$). While attendance in the earlier 10-session treatment was suboptimal (only four of 11 attended all sessions), four of the six participants in the revised 8-session treatment attended all eight sessions.

Discussion: The findings indicate that our tailored intervention combining CBT and MI achieved substantial improvements in mental health and behavioral outcomes in a sample of HIV-positive GBM. Addressing shortcomings noted in our previous 10-session treatment, results showed improved attendance in a revised 8-session treatment and overall improvements pre-to post-treatment in depression, anxiety, emotion dysregulation, and sexual compulsivity.

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Symposium 78B

HIV-RELATED BEHAVIORAL OUTCOMES ASSOCIATED WITH SEXUAL COMPULSIVITY AMONG HIV-POSITIVE GAY AND BISEXUAL MEN: LONGITUDINAL LINKS

Brett M. Millar, PhD

Background: Sexual compulsivity (SC) in HIV-positive gay and bisexual men has been associated with increased rates of sexual risk behavior and poorer medication adherence in numerous cross-sectional studies. However, studies have rarely investigated the role of SC in longitudinally predicting HIV-related behaviors, including condomless anal sex, heavy drinking before or during sex (i.e., 6 or more drinks), and medication non-adherence. We investigated SC as a predictor of subsequent behavioral outcomes among HIV-positive gay and bisexual men enrolled in a national online longitudinal HIV prevention study.

Methods: In 2015–2016, 807 HIV-positive gay and bisexual men completed the SC scale in their 3-month survey. We assessed behaviors reported in their 6-month survey. Men with and without SC at 3 months, indicated by a score of ≥ 24 on the SC scale, were compared on rates of condomless anal sex and events of heavy drinking before or during sex (in negative binomial regressions), and on the odds of medication non-adherence (in binary logistic regression).

Results: The sample was mostly White (65%), with a mean age of 39.5 (range: 19–77). SC measured at 3 months was associated with behaviors at 6 months: more condomless anal sex events, ARR=1.46, $p < .001$; more heavy drinking before or during sex, ARR=1.49, $p < .01$; and increased odds of having missed doses of HIV medication, AOR=1.79, $p < .01$. Each of these associations remained significant in multivariable analyses, which adjusted for age and treatment condition.

Conclusions: The current findings situate SC in the context of various adverse health behaviors among HIV-positive gay and bisexual men—condomless anal sex, heavy drinking before or during sex, and medication non-adherence. However, our findings extend previous literature by detecting longitudinal associations between sexual compulsivity and the three behaviors measured three months later. This study therefore highlights the importance of addressing SC within HIV-positive gay and bisexual men, with the aim of also reducing adverse health behaviors among this high-risk population.

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Symposium 78C

COMPULSIVE SEXUAL BEHAVIOR AND PSYCHIATRIC COMORBIDITY AMONG HIGHLY SEXUALLY-ACTIVE GAY AND BISEXUAL MEN

Matthew Wachman, BA

Background: Significant differences have been found in rates of HIV transmission risk behaviors between gay and bisexual men (GBM) who are classified as sexually compulsive (SC) versus those who are just highly sexually active. In the age of treatment as prevention, discovering treatable comorbid variables that have the power to influence overall health outcomes becomes paramount. We sought to examine how a history of trauma comorbid with various other psychological and behavioral issues may contribute to the emergence of the SC maladaptation.

Methods: A diverse sample of 337 highly sexually active (≥ 9 partners in previous 90 days) GBM, aged 18–73 ($M=36.8$), completed a survey including measures of socio-demographics, childhood sexual abuse, sexual compulsivity, and the Computerized Diagnostic Interview Schedule (CDIS). The sample was classified as having SC if they were above the threshold (SC score > 23).

Results: Fifty-one percent of the sample was classified as SC. Chi-square analyses revealed significant differences between GBM with SC and GBM without SC in rates of PTSD, ADHD, Major Depressive Episode, Obsessive Disorder, and Manic Episode. Multivariable analyses included significant demographic covariates, childhood sexual abuse, and significant psychological disorders from our bivariate analyses. In multivariable models, men with PTSD had 2.16 times greater odds of being in the SC group compared to the non-SC group. History of a manic episode was associated with 2.53 times greater odds of being in the SC group.

Conclusions: Our findings suggest that SC presents in the context of a range of comorbid mental illness conditions, among our sample of highly sexually-active GBM. PTSD and manic episodes were both associated with a higher likelihood that SC would be manifest. Future studies should be conducted in order to determine the efficacy of concurrently treating SC as well as underlying comorbid psychiatric conditions, particularly regarding past trauma experiences, as a means of lowering HIV risk, and improving overall health outcomes.

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April 14, 2018 Saturday

D001

10:00 AM-11:00 AM

BODY IMAGE CONCERNS AND HIGH-RISK TANNING BEHAVIOR

Jerod L. Stapleton, Ph.D., Zhaomeng Niu, Ph.D., Veenat Parmar, MPH

Rutgers, The State University of New Jersey, New Brunswick, NJ

Objective: There is a need to study the beliefs and motives underlying high-risk ultraviolet tanning behavior. The hypothesis of this study was that individuals with elevated body image concerns would be more likely to report frequent indoor tanning behavior as well as other high-risk UV behaviors including sunbathing.

Methods: Participants were 823 young adult women recruited from a probability-based web panel in the United States. Latent profile analysis was used to identify subgroups of participants based on patterns of responses to survey items related to tanning beliefs, perceived sociocultural influences on tanning behavior, and tanning-related body image.

Results: We found evidence for 4 subgroups with distinct survey response patterns: tanning unfavorable, tanning favorable, ambivalent tanning-related body image, and negative tanning-related body image. Participants with negative tan body image were more likely to be frequent indoor tanning users and report higher rates of other high-risk UV behaviors.

Conclusion: Findings suggest that body image concerns are prevalent among frequent, high-risk tanners and there may be a benefit to targeting body image-related risk factors and promoting positive body esteem in skin cancer intervention and prevention efforts.

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D002

10:00 AM-11:00 AM

DEVELOPMENT OF A TAILORED, WEB-BASED PHYSICAL ACTIVITY PROGRAM AND EXERCISE PLAN FOR WOMEN DIAGNOSED WITH BREAST CANCER.

Cynthia C. Forbes, PhD¹, Melanie Keats, PhD¹, Tallal Younis, MD², Corneel Vandelanotte, PhD³, Camille Short, PhD⁴, Chris Blanchard, PhD¹

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Objective: To communicate details of the development, design, and content of a web-based physical activity (PA) support program and exercise plan (www.exerciseguide.ca) tailored to the needs and preferences of breast cancer survivors (BCS).

Methods: A literature review was conducted to determine appropriate frameworks and content. Mixed-methods surveys determined barriers to increasing PA and decreasing sitting time and strategies to overcome these barriers using open and closed-ended questions. Theory-based content was adapted from previously developed guidebooks and websites for BCS. In addition, we followed the recommendations for reporting tailored interventions to ensure consistency across the literature.

Results: We surveyed 20 adults (12 BCS and 8 support people) to determine successful strategies used to increase PA and decrease sedentary time. We have produced six modules of tailored content, including an exercise plan. Modules address specific exercise guidelines, personalized feedback on current PA measured with Fitbits, the benefits of PA for cancer survivors, information on benefits of light PA and reducing sitting time, how to build a habit, identifying barriers and how to overcome them, how to build motivation, and other lifestyle advice. Literature and experts were consulted on best practice for prescribing aerobic and resistance exercise to women diagnosed with breast cancer. Tailoring decisions were based on previous research and the participant's physical status (current amount of activity, current treatment status, level of disability, working status, PA values, PA knowledge and capabilities, and comorbidities). Modules are individually tailored with brief questionnaires asked at the beginning of each module. Action plans incorporate strategies from the surveys which found common barriers of time constraints, weather, cost, and being too tired, among others. Strategies to overcome these barriers included making a schedule, doing small increments of PA throughout the day, work out at home or go somewhere inside to walk (i.e., a mall or recreation centre).

Conclusion: This content and design have been rigorously developed using previous research and expert and target audience consultation. This will ensure the next phase, an iteratively tested proof of concept usability study among the target population, will yield as much valuable information as possible.

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D003

10:00 AM-11:00 AM

ELECTRONIC PATIENT-REPORTED SYMPTOMS: FEASIBILITY STUDY FOR UNIVERSITY ROCHESTER NCI COMMUNITY ONCOLOGY RESEARCH PROGRAM

Marie Flannery, PhD¹, Christian Adonizio, MD², Mark Wojtowicz, MS MBA², Molly Goodman, BS³, Spencer Obrecht, BS³, Sandy Plumb, BS³, Christopher Seiler, MD², Amber Kleckner, PhD³, Chintan Pandya, PhD³, Supriya Mohile, MD³

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In oncology, research has demonstrated that routine electronic collection of patient-reported symptoms improves symptom relief, quality of life, and survival. Despite the widespread use of electronic medical records (EMR), the potential to leverage it for patient reported outcomes (PRO) collection in routine clinical care and extracting existing outcome data has been minimal. To determine the feasibility of routine collection of symptom data and extraction of variables via the EMR, we conducted a pilot study at two different thoracic oncology practice sites. The aims were 1) to establish the feasibility of electronic capture of symptoms as part of routine clinical operations, 2) to design and implement a scalable infrastructure for the extraction of patient outcomes from the EMR and 3) identify challenges.

At Site1, symptom collection via EMRs was in place and, at Site2, symptom collection was initiated with study evaluation. A minimum data set for symptoms and outcome measures was established. Data were collected for one month, and symptom survey completion rate was noted. For Aim 2, a data dictionary and program code was developed for EMR extraction of demographics, tumor and treatment characteristics and health care utilization measures.

At Site1, 78 patients were asked to complete surveys and 33 were completed (42%); at Site2, 163 symptom surveys were requested and 40 were completed (26%). For Aim2, extraction was 100% successful for 21/30(70%) variables at both sites (e.g., demographic, treatment data, utilization variables), partially successful for some variables (e.g., staging, referrals) and unsuccessful for 2 variables (e.g., pathology). We encountered multiple barriers to real-world implementation of routine electronic collection of symptoms including resistance to changing standard practice (by patients, providers and staff), challenges to establishing an integrated workflow and non-discrete nature of data in the current EMR.

At 1-month symptom survey completion rate was low at both sites. Significant resources are required to implement routine symptom collection with the EMR and overcome barriers. However, extracting data from the EMR was highly successful, and additional variables were identified that may need to be integrated into discrete fields for extraction. Theory-informed behavioral change interventions need to be tested for successful implementation of PRO collection in routine clinical care.

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D004

10:00 AM-11:00 AM

EMPOWER 2.0: A STAKEHOLDER-INFORMED DECISION INTERVENTION TO EMPOWER PATIENTS WITH METASTATIC CANCER

Adina Kazan¹, Wasef Atiya¹, Laura M. Perry, BS¹, Elise Goff¹, Ashley Beggin, BS², James Rogers³, Douglas J. Meffert, PhD⁴, David G. Morrison, MD, PhD¹, Gwendolyn L. Garrison⁵, Michael Hoerger, PhD, MSCR¹

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Background: Palliative care has been shown to improve the quality of life of patients with serious illnesses, but is underutilized. Expanding on our prior pilot study, our goal in EMPOWER 2.0 is to increase palliative care utilization by developing a psychoeducational intervention for patients with metastatic cancer that uses a multimedia format suitable to low-literacy populations, rests on meta-analytic medical evidence and national guidelines, and integrates stakeholder feedback from patients, caregivers, and oncology clinicians.

Methods: Using Community-Based Participatory Research (CBPR) methods, we aimed to engage a stakeholder advisory board of patients, caregivers, and oncology clinicians for quarterly meetings designed to provide feedback on the design and implementation of the psychoeducational intervention and iteratively improve the intervention using that feedback. A systematic review and meta-analysis were used to summarize medical evidence and national guidelines. The intervention was developed using multimedia video software.

Results: At the mid-point of this 3-year project, the study has been successful in convening on a quarterly basis 11 stakeholders consisting of 4 oncology clinicians, 4 patients, and 3 caregivers. Stakeholders emphasized the need for the intervention to be appropriate for patients, caregivers, and clinicians with a wide range of literacy and education. In response to this feedback, two versions of a video-based intervention explaining palliative care were created, one that provides more empirical evidence and one that is less cognitively demanding, allowing patients to choose which content they prefer. Both videos were made using GoAnimate software and provide information regarding local palliative care resources. The beta versions of these video-based interventions will be displayed alongside this poster, and based on a final round of stakeholder feedback, we will begin implementing the intervention locally in July 2018 to increase utilization.

Discussion: This study demonstrated the feasibility of engaging community stakeholders in alpha-testing psychoeducational interventions that may increase palliative care utilization. Our team's experience can provide practical strategies for other investigators seeking to utilize stakeholder engagement to create materials that are customized to their target population.

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D005

10:00 AM-11:00 AM

EXPOSURE TO HPV-RELATED STORIES AND PARENTS' INTENTION TO VACCINATE

Marjorie Margolis, MSPH¹, Melissa B. Gilkey, PhD², William A. Calo, PhD, JD³, Susan Alton Dailey, MPH, MSW⁴, Noel T. Brewer, PhD²

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Introduction: Over one-third of parents refuse or delay HPV vaccination for their children. Little is known about what information parents receive about HPV vaccination through media and social interactions or how that information influences their vaccination decisions. Thus, we assessed the association between recalling HPV vaccine-related “stories” and parents’ intention to vaccinate.

Methods: In 2017, we conducted a national, online survey of parents ($n=1,207$) of adolescents ages 9 to 17 who had not completed the HPV vaccine series. The survey assessed whether and where respondents had heard stories of people who had experienced: 1) harms related to HPV vaccination (“HPV vaccine harms”); or 2) diseases that could have been prevented by HPV vaccination (“HPV vaccine preventable diseases”). We used multivariable linear regression to assess the association between story type (none/vaccine harms only/vaccine-preventable diseases only/both) and parents’ intention to get the next dose of HPV vaccine. The model controlled for child’s sex and age, and parent’s education.

Results: About one-third (34%) of parents recalled having heard stories of HPV vaccine harms, including long-lasting serious harms (16%), mild side effects (12%), temporary serious harms (9%), or death (7%). Common sources of these stories were conversations (14%), social media (13%), and local or national news (13%). Compared to harms, a smaller proportion of parents (26%; $p<0.001$) recalled having heard stories of HPV vaccine preventable diseases. Stories included those about abnormal Pap smears (12%), HPV infection (11%), HPV-related cancers (10%), genital warts (9%), or HPV-related cancer death (4%). Sources of stories about diseases were similar to those for harms. In multivariable analysis, intention to vaccinate was higher among parents who recalled stories about HPV vaccine preventable diseases only ($b= 0.27$; SE: 0.13, $p= 0.03$), but lower among those recalling stories about HPV vaccine harms only ($b= -0.74$; SE: 0.10, $p<0.001$) or both diseases and harms ($b= -0.59$; SE: 0.11, $p<0.001$).

Discussion: Stories of HPV vaccine preventable diseases are associated with higher intentions to vaccinate, but only in the absence of stories about HPV vaccine harms, which are more common. Findings of this national study may suggest a deleterious effect of stories of harm on HPV vaccination intentions and could help explain why awareness campaigns have done little to improve HPV vaccination coverage nationally.

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D006

10:00 AM-11:00 AM

FINANCIAL HARDSHIP AND HEALTH BEHAVIORS AFTER CANCER DIAGNOSIS: RESULTS FROM THE DETROIT ROCS PILOT COHORT STUDY

Theresa Hastert, Ph.D., M.P.P.¹, Ezinne Ndukwe, M.P.H.², Amanda Reed, M.P.A.¹, Ann G. Schwartz, Ph.D., M.P.H.¹, Tara Baird, M.A.¹, Jennifer Beebe-Dimmer, MPH, PhD³

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Background: Nearly one-third of cancer survivors in the United States experience financial hardship due to cancer but it is not known whether financial hardship is associated with health behaviors among survivors. We examined whether experiencing financial hardship was associated with cancer-related health behaviors among diverse cancer survivors in Metropolitan Detroit.

Methods: Data from the Detroit Research on Cancer Survivors (ROCS) pilot cohort include responses from 1,000 (414 white, 586 African-American) adults (ages 27–79) diagnosed with a first primary breast, colorectal, lung, or prostate cancer since January 1, 2013 and diagnosed or treated at the Karmanos Cancer Center. Financial hardship included experiencing a decrease in income, borrowing money from friends or family, experiencing lasting debt, or accessing existing assets (refinancing/selling a home, selling investments, withdrawing money from retirement savings) due to cancer. Health behaviors included physical activity, diet, and alcohol consumption in the past 4 weeks; current smoking; and receipt of cancer screening tests in the previous year. Results of bivariate analyses and linear regression models are reported.

Results: Overall, 46% of participants experienced some form of financial hardship. Financial hardship was associated with lower levels of participation in any moderate activity in the previous four weeks (39.9% vs. 33.1%, $p=0.03$) and with higher levels of weekly consumption of non-diet sodas (45.0% vs. 38.8%, $p=0.05$). Financial hardship was inversely associated with alcohol consumption—fewer survivors who experienced financial hardship consumed alcohol in the past 4 weeks compared to those who did not (44.7% vs. 54.2%, $p=0.01$) and experiencing financial hardship was associated with consuming 0.84 (95% CI: 0.20, 1.48) fewer alcoholic drinks per week on average. Financial hardship was marginally associated with current smoking (19.4% vs. 14.9%, $p=0.07$), but was not associated with receipt of cancer screening in the previous year or with other dietary behaviors including consumption of fruits, vegetables, red or processed meats, or dessert foods.

Conclusions: Financial hardship was inversely associated with alcohol consumption and physical activity and positively associated with regular soda consumption. Cancer survivors experiencing financial hardship may be an appropriate population to target for behavioral interventions in addition to financial assistance.

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D007

10:00 AM-11:00 AM

FLORIDA BIOBANK FOR BLACK MEN: FEASIBILITY OF RECRUITING AFRICAN-AMERICAN PROSTATE CANCER PATIENTS FOR BIOSPECIMEN RESEARCH

Siddhartha Roy, DrPH¹, Jennifer C. Damonte, MA¹, Carmen G. Benson¹, Hyun Park, MS¹, Heloise N. Borges, MPH¹, Mmadili N. Ilozumba, BS², Alan Pollack, MD-PhD³, Shahla Masood, MD⁴, Youngchul Kim, PhD¹, Jasreman Dhillon, MD¹, Kosj Yamoah, MD-PhD¹, Julio Powsang, MD¹, Thomas A. Sellers, PhD¹, Clement K. Gwede, PhD¹, Jong Y. Park, PhD¹

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Background: Prostate cancer affects African-American (AA) men disproportionately compared to men of all other racial/ethnic groups. To identify behavioral and biological bases for this health disparity, we sought to create a state-wide biospecimen bank of AA prostate cancer patients in Florida. This goal required the recruitment of patients, collection and management of patients' data, tumor tissue samples and saliva.

Methods: Self-identified Blackprostate cancer patients diagnosed between 2013 and 2015 who were living in Florida at the time of diagnosis were identified through the Florida Department of Health, Florida Cancer Data System (FCDS). Potential participants were mailed an information packet developed with the help of prostate cancer survivors and other community partners containing information about the study, with follow-up by telephone to establish connections between researchers and patients. Interested patients were screened for eligibility and asked to complete a questionnaire, provide a saliva sample, and provide permission to obtain their tumor tissue sample. Patients were offered up to \$30 for participating in the study.

Results: Information packets were sent to 1872 AA patients, 46 of whom were ultimately found to be ineligible. To date, among patients who were reached via mail or phone, 324 have consented to participate, 736 declined, and 449 have not responded to the initial information packet resulting in a participation rate of 21.5% (324/1509). Primary reasons for declining include patients stating that they are not interested (72%), too sick (8%), or too busy (5%). Examination of demographic factors, such as age, insurance status, tumor grade, and cancer status, associated with participation is currently ongoing.

Discussion/Conclusion: Our results show that the recruitment of AA prostate cancer patients through a cancer registry for participation in biobank research is feasible. However, challenges do exist that impede response and hinder recruitment. Additional avenues for targeting and reaching this population to increase participation in biospecimen science and research are needed to address cancer disparities among this population.

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D008

10:00 AM-11:00 AM

MEANING-CENTERED PSYCHOTHERAPY FOR ADVANCED CANCER PATIENTS: AN EXAMINATION OF MODERATORS OF TREATMENT EFFICACY

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Advanced cancer patients may face challenges to their spiritual well-being as they approach end of life. Meaning-centered psychotherapy (MCP), which enhances a sense of meaning, has been found to effectively improve spiritual well-being in multiple pilot and randomized control trials (RCTs; Breitbart et al., 2015). Further research is needed however to examine potential moderators of treatment efficacy — in other words, is MCP equally effective across different populations?

The present study pools together data from four pilot studies and RCTs of MCP, and examines potential moderators of treatment efficacy. Specifically, key demographic (e.g., race), medical (cancer stage), and baseline religiosity/spirituality (R/S) variables are examined.

Methods: Sample consisted of participants who received MCP treatment in the experimental arm of four previous studies (N = 301). In all studies, data were collected pre-treatment, post-treatment, and at follow-up, six to thirteen weeks after treatment; in one of the studies, data were also collected mid-treatment. The outcome variable, spiritual well-being, was assessed at all time points using the Functional Assessment of Chronic Illness Therapy-Spiritual Well-being Scale (Brady et al., 1999).

Moderators assessed included:

1. Age
2. Sex
3. Years of education
4. Race (white vs. black)
5. Marital status (single vs. married)
6. Cancer stage (III vs. IV)
7. Self-rated religiosity
8. Self-rated spirituality
9. Attendance at religious services

Results and Discussion: Multi-level modeling was used to model the rate of improvement in spiritual well-being across study span (level 1), and to examine if moderators predicted the rate of improvement (level 2). Results showed that participants as a whole improved in their spiritual well-being across study span ($b = 1.12, p < .001$). More importantly, level two coefficients showed that none of the demographic variables and cancer stage moderated the rate of improvement. Thus, MCP appeared to be equally effective across patients of different age, gender, and education, and regardless of whether they were black or white, single or married, and had stage III or IV cancer.

One of the three baseline R/S variables — attendance at religious services — however showed a significant moderation, such that individuals who *regularly* attended services experienced less improvements ($b = -.70, p < .05$), whereas those that did not attend at all, experienced more. Further examination indicated that those who did not attend services started the study with much lower well-being. Comparing this pattern to the other two R/S variables indicated that, although there was no statistically significant moderation, there was a similar trend. Thus, the results seemed to suggest that MCP may be particularly suited for individuals low on R/S, who may be more prone to experiencing lower spiritual well-being (Peterman et al. 2002).

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D009

10:00 AM-11:00 AM

MEDITATIVE INTERVENTIONS AND MENTAL HEALTH OUTCOMES AMONG MALE CANCER SURVIVORS: A META-ANALYSIS

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Cancer is a major public health problem that entails unique psychosocial stressors. Meditative interventions (e.g., Mindfulness-based interventions, yoga, and tai chi/qigong) have been shown to be effective adjunctive cancer treatments, especially for psychosocial concerns, such as depression, stress, and anxiety. Most of the research to date examining these interventions in cancer populations includes predominantly female participants. Thus, the impact of these interventions on men is largely unknown. Therefore, the present study sought to evaluate the effectiveness of meditative interventions on psychosocial outcomes in men with cancer diagnoses. Data were extracted from randomized controlled trials of meditative interventions for adjunctive cancer care in which more than 20% of the participants were men. In total, 18 studies were included in the final analysis which included 921 total male participants. The participants were 68 years of age on average ($SD = 9.15$) and predominantly non-Hispanic white (91%). Psychosocial outcomes extracted included measures of psychological distress (anxiety and depression), stress, and quality of life. Preliminary analyses indicate a weighted average of effect sizes (Cohen's d) combined for all psychosocial outcomes of .086 (95% CI: -.164, .337) in favor of meditative interventions. For psychological distress (e.g., anxiety and depression), there was a small weighted effect size found of .197 (95% CI: -.221, .615). These effects are significantly more modest than the moderate to large effects found in other meta-analyses for meditative interventions in cancer populations, particularly for women with breast cancer. This summary suggests that these meditative interventions may be less effective for men overall, may need to be tailored specifically for men, or may only be effective for some subgroups of men. Extending the evidence base of these promising interventions includes more careful outcome measurement, implementation science considerations, and tailoring to different populations.

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D010

10:00 AM-11:00 AM

PHYSICAL ACTIVITY AND SYMPTOMS IN YOUNG ADULTS WITH CANCER AT THE BEGINNING OF CHEMOTHERAPY

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Staying physically active has important short- and long-term benefits for patients with cancer, including less severe symptoms, improved physical function, and better tolerance to treatment. During chemotherapy, multiple cancer-related symptoms may increase the likelihood of being inactive. Young adults with cancer are an understudied group of patients, and little is known about their physical activity during cancer treatment.

This report provides baseline data about physical activity and symptom severity for 16 young adults (18–39 years old) enrolled in a randomized trial examining the effect of a physical activity intervention. To document their baseline physical activity, participants wore an accelerometer (ActiGraph GTX3+) for seven days during a week of chemotherapy administration. Accelerometer data were analyzed to determine steps per day and the amount of time participants spent per day in light, moderate, and vigorous physical activity using established cut points (Freedson et al., 1998; Matthews et al., 2012). Symptom severity was documented using the PROMIS-29 Profile.

These young adults (62.5% female, mean age = 33.3 years) were in the first two months of treatment for diagnoses including breast cancer (5), lymphoma (5), leukemia (4), myeloma, and melanoma. Most were partnered (62.5%), and most (62.5%) were parents. The sample averaged 5137 steps/day with 242 minutes/day of light physical activity, 19 minutes/day of moderate physical activity, and no vigorous physical activity. The mean standardized PROMIS-29 profile scores for physical function, fatigue, sleep disturbance, depression, anxiety, pain interference, and ability to participate in social roles and activities for this sample ranged from 49.45 (physical function) to 55.16 (pain interference).

This group of young adults receiving chemotherapy engaged in a sufficient amount of health-enhancing physical activity (at least 150 minutes/week), similar to an age-matched national cohort (Troiano, et al, 2008). Their symptom severity scores were similar to average scores for a sample of healthy US adults (PROMIS® Adult Profile Instruments, 2015). The larger study will examine how physical activity changes during the course of chemotherapy and how supportive interventions may be used to optimize physical activity for young adult patients.

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D011

10:00 AM-11:00 AM

REALLOCATION OF TIME SPENT IN SLEEP, ACTIVITY AND SEDENTARY BEHAVIOR: ASSOCIATIONS ON QUALITY OF LIFE IN KIDNEY CANCER SURVIVORS

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Background: High levels of sedentary behavior has been linked to negative health outcomes in cancer survivors including decreased physical and mental functioning. Cancer survivors, including kidney cancer survivors (KCS) are more likely to report engaging in higher levels of sedentary behavior, minimal time spent light or moderate-to-vigorous physical activity (MVPA), and poor sleep patterns. These behaviors may independently or in combination with one another contribute to poorer quality of life (QoL). To optimize interventions aimed at improving QoL in KCS, investigating the effects of replacing sedentary time with physical activity (PA) or sleep on QoL is warranted.

Purpose: To examine the potential associations of reallocating 10-min of sedentary time with 10-min of sleep, light, or MVPA on QoL in a KCS.

Methods: 1,985 KCS from a Canadian Provincial Registry were mailed a survey consisting of the Godin Leisure-Time PA Questionnaire, domain-specific sitting time, sleep duration, and several Functional Assessment of Cancer Therapy (FACT) scales. Demographic and medical variables were collected via self-report. Isotemporal substitution analyses were conducted to estimate the effects of relocating time spent in sedentary time with sleep, light PA or MVPA on QoL.

Results: Completed surveys were received from 481 KCS ($M_{age} = 62.9 \pm 10.5$). The substitution of 10-min of sedentary time with 10-min of light PA or MVPA was associated with better functional status on the Trial Outcome Index-Fatigue scale ($B = .084$, $SE = .037$, $p = .025$ and $B = .069$, $SE = .026$, $p = .009$, respectively). Substituting 10-min of sedentary time with 10-min of light PA was associated with better physical well-being (PWB) ($B = .021$, $SE = .010$, $p = .028$), but lower emotional well-being ($B = -.021$, $SE = .009$, $p = .016$). No associations were found with substituting 10-min of sedentary time with 10-min of sleep, light PA, or MVPA with FACT-Fatigue, FACT-General, or the FACT subscales of social well-being and functional well-being.

Conclusion: Replacing sedentary time with 10-min of light PA is associated with less fatigue and better physical functioning but worse emotional functioning. Modest reductions in sedentary behavior result in significant changes in certain aspects of QoL when substituted with physical activity. These findings demonstrate that even 10-min bouts of PA, which represents the minimum bout of time accrued to meet the current PA guidelines, can result in potentially meaningful changes in QoL.

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D012

10:00 AM-11:00 AM

THE ASSOCIATION BETWEEN LIGHT PHYSICAL ACTIVITY AND FATIGUE AMONG POST-TREATMENT CANCER SURVIVORS

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American Cancer Society, Atlanta, GA

Substantial research demonstrates a negative association between moderate-to-vigorous physical activity (MVPA) and fatigue among cancer survivors. Less is known about the association of light physical activity (LPA) and fatigue. This study aimed to examine the associations of LPA and fatigue, and explore the moderating effect of MVPA on the LPA-fatigue association, among post-treatment cancer survivors.

Methods: Self-report data from the American Cancer Society's Studies of Cancer Survivors I and II were merged. Using the Leisure Time Exercise Questionnaire, four LPA groups (0, 1–59, 60–119, and 120+ minutes/week) and three MVPA groups (0, 1–149, and 150+ minutes/week) were created. ANCOVAs assessed the main and interactive effects of MVPA and LPA on SF-36 vitality (fatigue/energy) subscale. Covariates included age, time since diagnosis, race/ethnicity, cancer type by gender, cancer stage, SF-36 mental health subscale and number of comorbidities.

Results: The sample ($N = 10,213$) was primarily white/Caucasian (80.8%), female breast (29.4%) or male prostate cancer survivors (21.4%), with localized cancer (69.2%), 4.8 years ($SD = 3.3$) from diagnosis, having 1–2 comorbidities (49.9%), and mean age of 64.1 years ($SD = 12.4$). Almost 27% of the sample reported no leisure-time LPA or MVPA. MVPA [$F(2) = 295.33$, $p < 0.001$] and LPA [$F(3) = 14.11$, $p < 0.001$] were independently, negatively associated with fatigue. An LPA by MVPA interaction [$F(6) = 10.65$, $p < 0.001$] indicated that among those reporting no MVPA, fatigue was greater among those reporting no LPA compared to those reporting ≥ 120 min/week of LPA [mean difference = 2.58 ($SE = 0.27$), $t = 9.71$, 95% CI: 2.06, 3.10]. A significant linear trend showed that fatigue declined with increasing levels of LPA among those with no MVPA [$p < 0.001$]. Among those reporting 1–149 and 150+ min/week of MVPA, there was no association between LPA and fatigue.

Conclusion: Leisure-time MVPA and LPA are independently, negatively associated with fatigue among cancer survivors. Leisure-time LPA may be particularly beneficial for fatigue among cancer survivors engaging in no leisure-time MVPA. The potential of LPA to improve fatigue among survivors should be investigated using measures of LPA that include occupational, transportation, and activities of daily living, and using longitudinal and RCT designs.

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D013

10:00 AM-11:00 AM

THE STUPID CANCER APP: INITIAL FINDINGS FROM AN MHEALTH TOOL FOR YOUNG ADULT CANCER SURVIVORS

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Background: Young adult (YA) cancer survivors report unmet needs for emotional and informational support. The Stupid Cancer app is a publicly available, free mobile app that provides instant, anonymous peer support and targeted cancer information for anyone affected by YA cancer including caregivers/loved ones. Users complete a profile and are matched with peers based on self-selected criteria or can participate in unstructured, moderated group chats.

Objective: Evaluate app performance and user feedback in the 3 months post-launch.

Methods: A product and user analysis evaluated app functioning, user engagement, and user feedback using quantitative app metrics and qualitative feedback from solicited and unsolicited app reviews.

Results: 1402 people downloaded the app and completed 209,995 interactions (profile set-up, discovering peer matches, and messaging). Users were mostly YA survivors (77.4%), female (77.0%), post-treatment (45.1%), and US-based (92%); international users represented 50 countries (1100 cities). In-app interactions averaged 16,153 per week, amounting to an average of 215.3 hours spent by users in the app per week. Average user session time was 10.5 minutes, with a trend showing longer session durations over time (peaking at 14.5 minutes). Session time appeared to vary by user location with more rural and international users spending more time than larger city and US-based users, respectively. Private one-to-one messages made up the majority of total message exchanges (n=22,672). The most popular group chat discussions were about defining the cancer experience, finding support, and anxiety. User feedback suggested the app is well-liked by the YA cancer community. Public reviews (n=28) were positive (mostly 5-star ratings), highlighting the value and benefit of being able to find peers with similar cancer experiences to connect with. Suggestions from solicited reviews (n=6) included increasing user control and flexibility over the peer searching/matching process; and a few expressed hesitation or nervousness initiating/joining conversations.

Conclusions: Findings suggest this app-based support tool may be a promising way to reach this underserved population and provide support. Future research should evaluate whether access to app-based support leads to improvements in psychosocial outcomes. Strategies to address possible in-app social anxiety, facilitate initial connections, and support meaningful in-app experiences need to be explored.

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D014

10:00 AM-11:00 AM

A COMPARISON GLOBAL AND DAILY REPORTS OF SUBJECTIVE COGNITIVE COMPLAINTS AMONG BREAST CANCER SURVIVORS

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Background: More than 50% of cancer survivors report problems with concentration since their diagnosis and treatment; however, these reports may contain retrospective or emotional bias. That is, individuals with possible cognitive difficulties must retrospect across weeks or months about a distressing problem. These ratings could be influenced by peak (i.e., when functioning was worst) or recency (i.e., how functioning has been lately). The goal of this study was to test whether these conventional retrospective reports predict memory lapses in daily life.

Methods: Breast cancer survivors (N=47, M age = 53.3, 6–36 months post chemotherapy-treatment) completed a standard global survey of subjective cognition (FACT-Cog) over the past week. Following this assessment, participants completed smartphone-based evening surveys for 14 days. Surveys included a checklist of types of memory lapses (i.e., forgot keys, missed appointment). Multilevel logistic models were used to test whether FACT-Cog ratings predicted likelihood of reporting a memory lapse in daily life (an index of frequency) and number of types of daily memory lapses (an index of pervasiveness across everyday tasks).

Results: Retrospective ratings of cognitive complaints over the last week aligned with daily reports of subjective cognitive function. Higher scores on the FACT-Cog, indicating better perceived cognition, were associated with lower likelihood of reporting a memory lapse on a given day (OR = 0.96, $p < .01$); survivors 1 standard deviation above average on FACT-Cog were 66% less likely to report a memory lapse on a given day than the average survivor. Additionally, higher FACT-Cog scores related to fewer types of memory lapses each day (Rate Ratio = .98, $p < .0001$). High FACT-Cog (+1SD) survivors reported .44 times fewer types of memory lapses on a given day than the average. These results (p 's $< .0001$) held when controlling for depression, perceived stress, time since treatment and age.

Conclusion: A widely-used assessment of subjective recall of cognitive function over the last week predicted daily reports of occurrence and variety of memory lapses in the following 2 weeks. This suggests that although a discrepancy remains between widespread subjective reports of post-chemotherapy cognitive problems compared to clinical assessments of cognitive impairment, the subjective recalls over relatively short time windows (e.g., weeks) align with incidences of forgetting events in daily life.

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D015

10:00 AM-11:00 AM

A MIXED METHODS EVALUATION OF SYMPTOM BURDEN AND QOL AFTER CURATIVE HNC TREATMENT

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Purpose We hypothesize that head-&-neck cancer (HNC) patients who receive multimodality treatment (i.e., surgery, radiation and chemotherapy), experience short and long-term treatment-related effects that negatively impact quality of life (QoL).

Materials/Methods A mixed methods study evaluated the effects of multimodality treatment on HNC patients. First, charts of 20 patients with HNC were reviewed; short-term scores on the MD Anderson Dysphagia and Symptom Inventories were compared among those receiving Trans Oral Surgery (TOS) followed by chemotherapy and radiation (CRT; n=6, 30%) and those receiving CRT only (n=14, 70%). Second, long-term QoL experiences were further explored through a facilitated focus group (FG) with 11 HNC survivors.

Results Chart review results: HNC Sample was mostly male (n=16, 80%), and on average 61 years. At 6–9 mos. post treatment, patients who received TOS and CRT reported significantly (p=.04) worse dysphagia (M=69.47, SD=14.61) compared to those who received only CRT (M=48.43, SD=27.63). FG results: Sample was 64% female and all completed treatment > 3 yrs. ago. Three patients had surgery first, and more than half had CRT. Coders identified three themes: Theme 1: Variability in symptoms. Dysphagia was endorsed by a majority of patients (n=6), plus overproduction of saliva/mucus (n=5), loss of taste and sense of smell (both n=4), neuropathy, pain (both n=3), fatigue, dental issues, weight loss, severe burns, muscle/throat tightness, and dry mouth (all n=2). Psychological symptoms were also frequently reported: uncertainty (n=5), loss of control (n=3), feeling lonely (n=3), and depression/anxiety (n=2). Theme 2: Long-standing negative impact on QoL. Even years post-treatment, patients (n=7) reported that treatment-related symptoms negatively and substantially impacted their QoL. Theme 3: Lack of information about recovery. All patients reported that they were unaware of the magnitude/extent of symptoms during recovery. Patients reported that providers minimized the overall impact of disease and treatment (n=9), or did not communicate at all about effects (n=5) or pain relief (n=2).

Conclusions HNC survivors reported significantly impaired QOL due to increased levels of dysphagia, as well as a host of other unanticipated effects. More data on recovery trajectories are needed to improve communication of these potential responses to treatment. Supportive measures are necessary to assist patients in managing the effects.

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D016

10:00 AM-11:00 AM

“CREATING A FAMILY AFTER BATTLING CANCER IS EXHAUSTING AND MADDENING”: YOUNG ADULT SURVIVORS’ FAMILY-BUILDING EXPERIENCES

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Purpose: Young adult (YA) cancer survivors who received gonadotoxic therapy are at risk for impaired fertility and/or childbearing difficulties. This study explored the experiences and financial concerns of YA survivors pursuing family-building through assisted reproductive technology (ART) or adoption.

Methods: Retrospective study of data collected from grant applications for financial assistance with family-building (N=53). Descriptive statistics characterized sociodemographic, medical, and financial information. Grounded theory methodology using an inductive data-driven approach guided qualitative data analysis.

Results: Participants (N=53) averaged 31 years old (SD=3.6), were primarily female (81%) and married/partnered (72%), and averaged 5 years (SD=5.6) post-treatment. Positive and negative emotions surrounding family-building processes were reported, which were greatly influenced by cancer experiences and financial stressors. Family-building costs were described as overwhelming and unexpected. Financial stress of family-building was exacerbated by cancer financial effects. Factors that increased distress during the family-building process included cancer-related health problems, perceived reproductive time pressure, peer comparisons related to life trajectory and financial solvency, and interpersonal concerns.

Conclusion: After cancer, YAs trying to build their families face a number of psychosocial and financial difficulties. A broader approach to managing fertility in post-treatment survivorship is needed to support survivors in making informed, values-based decisions including support related to financial planning.

Implications for Cancer Survivors: YA cancer survivors interested in having future children should receive follow-up fertility counseling post-treatment including discussion of alternative family-building options such as use of ART, surrogacy, and adoption, as appropriate, and potential barriers. Planning for the financial cost, in particular, may help to avoid or mitigate financial stress later on.

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D017

10:00 AM-11:00 AM

ACCEPTABILITY AND EFFECTIVENESS OF AN ONLINE AND IN-PERSON PEER NAVIGATOR TRAINING PROGRAM FOR PROSTATE CANCER SURVIVORS

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Background: Peer navigation enables cancer survivors to provide informational, emotional and practical support to new patients and their partners/ family caregivers. True NTH Peer Navigation Training Program (PNTP) is a competency-based blended online and in-person training program designed to equip prostate cancer (PC) survivors (patients, caregivers) with the requisite knowledge, skills, and resources for supporting matched peers as they navigate the health and social service systems. The PNTP consists of eight facilitated online modules and two full-day in-person sessions delivered over the course of six weeks.

Objective: To evaluate the acceptability and effectiveness of the PNTP among PC survivors.

Design/Methods: This is a one-arm pre-post feasibility study informed by the Kirkpatrick framework and Bandura's Self-Efficacy Theory. We employed an explanatory mixed method design consisting of online questionnaires and in-person focus groups.

Results: We delivered the PNTP to three cohorts of 26 participants in two Canadian cities. PNTP acceptability was high. Program satisfaction was rated as 9.4/10 (SD=0.7) and website usability was rated as 84.5/100 (SD=10.1). Perceived learning scores were also high: 4.5/5 (SD=0.4). In addition, there were statistically significant increases in pre/post scores for all learning outcomes: understanding of learning objectives $t(23)=6.13$, $p<0.001$; self-efficacy to perform peer navigator competencies $t(23)=5.2$, $p<0.001$; and eHealth literacy $t(23)=4.4$, $p<0.001$. Qualitative findings support and expand on these findings. Participants valued (1) flexibility of online learning, (2) relationship building via in-person learning and social events (3) group-based learning activities (e.g. online forum and role plays), and (4) practice-based learning opportunities. Areas for improvement were (1) more content on the needs of caregivers, (2) more practical health information technology content, and (3) distribute content more evenly across units.

Conclusions: A blended online and in-person training program is a highly acceptable and effective format to train PC survivors and caregivers to become peer navigators. Addressing areas for improvement may further enhance positive outcomes.

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D018

10:00 AM-11:00 AM

ADDRESSING CAREER-RELATED NEEDS IN AYA CANCER SURVIVORS: UNIVERSITY CAREER SERVICE PROFESSIONALS' EXPERIENCE AND RESOURCES

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Many adolescent and young adult (AYA) cancer survivors face a double transition- the transition from patient to survivor and the career-related transition from student to career. AYA survivors report concerns about career development and employment, including job-seeking, employment discrimination and disclosure of cancer history, and concerns about work demands and accommodations. University career service professionals are well-positioned to provide targeted resources, but no study has focused on those providing career-related services to AYA survivors. The goal of the present study was to assess university career service professionals' experience working with AYA survivors, preparedness for working with AYA survivors, and openness to resources for students who are AYA cancer survivors. Randomly selected career service offices at colleges and universities in the United States were sent an online survey. Forty career service professionals participated in the survey. Half of participants (N =20) reported an experience working with a student who was a cancer survivor. Some reported these students had cancer-specific concerns including flexibility related to internships, values and vocational goals, addressing cognitive deficits as a result of treatment, and switching to a career in health promotion and cancer prevention. Only two career service professionals reported providing cancer-specific resources. A majority of participants reported a lack of awareness to the specific career-service needs of cancer survivors (55%) or resources available resources available for student who were survivors (85%). Sixty-five percent agreed that career services resources specifically designed for college-aged cancer survivors would be useful and 87.5% said they would provide these resources to cancer survivors if available. Age, gender, years of experience, job level (director, counselor, administrator), and size of the career services office did not predict preparedness or openness to resources in unadjusted bivariate correlations or fully adjusted linear regression models. University-based career services may prove a significant resource for many AYA survivors. Career service professionals acknowledge a lack of training and awareness of AYA survivors' specific needs and report a desire for targeted resources. Future interventions can provide tailored career-service resources to both AYA survivors and career service professionals.

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D019

10:00 AM-11:00 AM

ADOLESCENT AND YOUNG ADULT CANCER SURVIVORS' UNMET NEEDS AND MOTIVATIONS FOR ATTENDING AN ONCOLOGY AND SOCIAL NETWORKING EVENT

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Introduction: Adolescent and young adult (AYA) cancer survivors are an understudied and underserved patient group. To address AYAs' unmet needs, the non-profit organization Stupid Cancer hosts an annual AYA oncology and social networking event called CancerCon.

Aims: This study aimed to evaluate AYAs' unmet needs and quality of life (QOL) and their motivations for attending CancerCon.

Methods: Registered attendees were emailed one week before CancerCon and completed a brief online, anonymous survey, including validated measures for AYA cancer impact, unmet needs, and QOL. Descriptive statistics and bivariate analyses were used.

Results: Participants (N=192; 62% response rate) averaged 31 years old (SD=7.2), were primarily White (81%), employed (77%), and most had completed treatment (63%). A range of unmet needs were endorsed related to informational/resource needs (61%), medical care interactions (45%), psychosocial concerns (85%), school (42%) and employment (74%), finances (71%), and health insurance (39%; with 85% reporting fears about change in coverage). Primary reasons for attending CancerCon included a desire to spend time with peers and feel connected to the AYA cancer community, access age-appropriate resources, be an advocate, gain confidence managing disease-related changes, and learn about latest research. On a 0–10 scale, average QOL was 6.4 (SD=2.0) and social support was 5.1 (SD=1.6). perceived social isolation related to lower QOL (median split; $t[157]=-3.8$, $p<.001$). Those currently in treatment had the lowest QOL and those with chronic disease had the greatest unmet support needs, compared to completed treatment and ongoing therapy subgroups ($p's<.05$). Differences in motivations for attending CancerCon and unmet needs based on treatment status were identified.

Discussion/Conclusion: Given high rates of unmet survivorship needs and barriers to informational and support resources, patient organizations may fill a critical gap in care. Future work should identify optimal ways for multidisciplinary collaboration to address AYAs' needs across their cancer trajectory. Targeted approaches that incorporate evidence-based support strategies and dissemination efforts, such as through digital platforms, should be explored.

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D020

10:00 AM-11:00 AM

AN RCT OF CBTH FOR DISTRESS DURING RADIOTHERAPY

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Radiotherapy is a common and effective treatment for women with breast cancer. However, radiotherapy has also been shown to adversely affect patients' emotional well-being. Currently, few mind-body interventions are designed to improve patients' quality of life during radiotherapy. One intervention which has demonstrated clinical efficacy in the breast cancer radiotherapy setting is CBTH (Cognitive-Behavioral Therapy plus Hypnosis). The goal of this study was to investigate the impact of CBTH on emotional distress in women with breast cancer undergoing radiotherapy. One hundred patients were randomly assigned to either the CBTH ($n=50$) or Attention Control (AC) ($n=50$) group. Results revealed significant benefits of CBTH on emotional distress at the midpoint ($d=0.54$), the conclusion ($d=0.64$), and four weeks following the conclusion ($d=0.65$) of radiotherapy (all $p's < .05$). In conclusion, results support further study of CBTH as an evidence-based intervention to reduce emotional distress women with breast cancer. CBTH has the benefits of being brief, noninvasive, lacking side-effects, and producing beneficial effects which last beyond the conclusion of radiotherapy. Given these strengths, we propose that CBTH is a strong candidate for greater dissemination and implementation in cancer populations.

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D021

10:00 AM-11:00 AM

ANXIETY AND DEPRESSIVE SYMPTOMATOLOGY IN ADULTS WITH STAGE IV NON-SMALL CELL LUNG CANCER (NSCLC) AT DIAGNOSIS

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Background: In large studies of cancer patients, lung cancer is associated with the highest levels of depression, anxiety, and risk of suicide. These symptoms may impact quality of life and survival in lung cancer. This study examined the prevalence of anxiety and depression in advanced non-small cell lung cancer (NSCLC) patients seeking outpatient treatment.

Methods: Preliminary data (8/2017) consisted of a sample of 18 (out of an estimated 140) newly diagnosed Stage IV NSCLC patients ($n=9$ females) enrolled in a single site trial investigating advanced genomic testing's impact on survival. Patients completed self-report measures assessing anxiety, depression, and psychiatric history over the phone with a trained interviewer at baseline. Using American Society of Clinical Oncology guidelines for the screening, assessment and treatment of depression (i.e., none/mild [score 1–7], moderate [score 8–14], moderate to severe [score 15–19], and severe [score 20–27] symptomatology based on the PHQ-9) and anxiety (i.e., none/mild [score 0–9], moderate [score 10–14], moderate to severe [score 15–21] symptomatology based on the GAD-7), the recommended measures were used and patients exhibiting moderate to severe symptomatology were identified. Future analyses will examine the relationship of depression and anxiety with psychological (e.g., cancer-related stress, hopelessness) and other patient-reported outcomes (e.g., cancer-related symptoms, income).

Results: PHQ-9 cutoff was exceeded for 27.8% of patients while 16.7% exceeded the GAD-7 cutoff. 16.7% reported at least moderate levels of comorbid depression and anxiety. Moreover, 50.0% reported experiencing at least some difficulties related to depression or anxiety affecting their daily functioning with 11.1% reported suicidal ideation. 16.7% reported having a previously diagnosed psychological disorder. 38.9% reported previously seeking mental health outpatient treatment and 55.6% reported previously taking medication to help treat an emotional or psychological problem.

Discussion: Preliminary analyses demonstrate a number of advanced NSCLC patients needing follow-up care to address mental health problems. For comparison, the 12-month prevalence in the general population for mood and anxiety disorders are estimated to be 9.5% and 18.1%, respectively. Advanced NSCLC in an outpatient setting exemplify an underrepresented group with a clear need for more research addressing their psychosocial needs and characteristics.

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D022

10:00 AM-11:00 AM

BUILDING CURVES? A MIXED-METHODS EVALUATION OF A COMMUNITY PHYSICAL ACTIVITY PROGRAM FOR BREAST CANCER SURVIVORS

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Background: Based on recommendations from the ACSM Roundtable on exercise guidelines for cancer survivors, the purpose of this multi-study research was to partner with, and evaluate, a community-based physical activity program (Curves™) as support for increasing physical activity behavior among women diagnosed and treated for breast cancer.

Methods: All women were recruited from a local breast cancer clinic in a large metropolitan city through chart review and physician discussion. All eligible participants (N = 203) were provided with a free one-year Curves™ membership. In study one, a group of women (n=14) who were provided with memberships Curves™ plus physical activity guidelines and a pedometer was compared to women (n=16) who were provided physical activity guidelines and a pedometer on changes in physical activity. In study two, (n=66) women who were provided with Curves™ memberships completed self-report questionnaires one year later to assess access, feasibility, attitudes and beliefs on the program. Study three was a qualitative study exploring the benefits and barriers of Curves™ as a community-based physical activity program for breast cancer survivors. A purposeful sample of six women who attended the program regularly were interviewed.

Results: In the small quasi-experimental study, the provision of memberships to Curves™ did not improve physical activity levels beyond educational and information resources. Based on the self-report responses (study 2) and qualitative findings (study 3), there are a number of advantages to community-based physical activity programs like Curves™ (e.g., women-only, short time commitment, circuit exercise), yet the women offer a number of suggestions for improvements for physical activity opportunities aimed at breast cancer survivors (e.g., variety, knowledge of staff on cancer, more feedback). Furthermore, the year-long free membership may have undermined autonomy and value of Curves™.

Conclusion: Community-based physical activity programs may be best for helping women to transition from cancer clinic/hospital services in the aftermath of cancer treatments, and may help build competence for autonomous physical activity. In this way, partnerships between local fitness organizations and cancer care facilities may be essential. Nonetheless, subsidized memberships (rather than free) may offer the best support for breast cancer survivors.

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D023

10:00 AM-11:00 AM

CANCER FEAR AND COLORECTAL CANCER SCREENING USING THE FAECAL OCCULT BLOOD TEST IN ENGLAND: A POPULATION-BASED STUDY

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Background: Uptake of colorectal cancer screening is affected by cancer fear, but previous studies have found both motivating and deterring effects. Comparison between studies is hindered by inconsistencies in measuring frequency of cancer fear versus intensity. In this study, we compare measures of frequency and intensity of cancer fear on intentions and uptake of the faecal occult blood test (FOBT) in England.

Methods: Across four population-based studies from 2014-2016, we collected data from 2,878 men and women aged 60-70 years who were eligible for the FOBT via the national NHS Bowel Cancer Screening programme. Measures included a single item about frequency of cancer worry, an item about intensity of anxiety about cancer, self-reported past FOBT uptake (ever vs never), intention to do the FOBT when next invited (yes vs no), and sociodemographic characteristics. Using logistic regression analyses, we compared a model containing only socio-demographic characteristics (Model 1) with four models adding cancer worry frequency (Model 2), cancer anxiety intensity (3), both (4), or a combined measure of frequency and intensity (5).

Results: For screening intentions, all four cancer fear models explained significantly more variance in the data than Model 1 (all $p < .001$), with most variance explained by Models 3 and 4 (Nagelkerke's $R^2 = .060$ and $.061$, respectively). The difference between these models was non-significant ($p = .63$). For screening uptake, Models 3, 4, and 5 explained more variance than Model 1 (all $p < .05$), with no difference between models 3 and 4, which again explained most variance (Nagelkerke's $R^2 = .054$ vs $.057$, $p = .11$). In Model 4, cancer worry frequency was not associated with screening intentions or uptake, so Model 3 appeared the most parsimonious model. In this model, being slightly or quite/extremely anxious about cancer was positively associated with FOBT screening intentions (OR=1.99, 95% CI 1.53-2.59, and OR=1.59, 95% CI 1.17-2.18, respectively) and uptake (OR=1.49, 95% CI 1.20-1.86, and OR=1.58, 95% CI 1.19-2.09).

Conclusion: Despite many studies using measures of cancer worry frequency to predict engagement with cancer screening, intensity of cancer anxiety seems to be a better predictor of FOBT screening for bowel cancer. Future studies should explore whether the same is true for other cancer screening programmes such as breast and cervical screening.

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D024

10:00 AM-11:00 AM

CANCER PATIENT EXPERIENCE AND SELF-MANAGEMENT OF SIDE EFFECTS OF ORAL CHEMOTHERAPY

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With the increasing use of oral anticancer medications for cancer treatment, patients face the challenge of self-management of medication side effects in the home setting. The purposes of this study were to describe patients' experience of side effects of an oral chemotherapy, capecitabine, self-management activities for side effects, and identify factors associated with performance of self-management activities.

A prospective descriptive study included 41 gastrointestinal cancer patients who had finished at least one cycle of capecitabine therapy. Measures included symptom severity and interference (MD Anderson Symptom Inventory, MDASI), and self-management activities for 7 known common side effects of capecitabine (Modified Self-Care Diary, MSCD). Descriptive statistics correlation analysis, and Mann-Whitney and Kruskal-Wallis tests were used.

Results from the MSCD indicated patient experience of moderate to very severe side effects "in the last 7 days" varied by side effect: fatigue (39.1%), constipation (31.7%), diarrhea (29.3%), nausea (21.9%), hand-foot syndrome (19.5%), sleep difficulties (12.2%), and mouth or throat sores (4.9%). In total, 836 out of 3075 self-management activities were reported. *The most commonly used self-management activities* were: Maintained activity level (fatigue); Kept busy to keep my mind off it (nausea); Read or watched TV (sleep difficulties); and Drank extra fluid (constipation), while *the most effective activities* were: Interaction with family or Applying relaxing oil (fatigue, self-developed by patients); Took prescribed anti-nausea medication (nausea); Took prescribed sleeping medication (sleep difficulties); and Took a stool softener or laxative (constipation). Non-white patients, patients with more severe symptoms as reported in the MDASI, and patients who had concerns of taking chemotherapy performed more self-management activities ($p=0.01$, 0.03, and 0.04, respectively). The influence of age, gender, education, depression, social support, and self-efficacy cannot be confirmed due to limited sample size.

This is among early studies to describe activities used for self-management of side effects of oral chemotherapy. Overall, non-pharmaceutical self-management activities were most frequently used, while taking medications was reported as the most effective activity for most side effects. The most effective activity reported for self-management of fatigue was patient self-developed. Future studies are needed to further understand self-management of side effects of oral chemotherapy behavior pattern among individuals, and provide personalized self-management support for patients at high risk for severe side effects.

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D025

10:00 AM-11:00 AM

CONCERNS ABOUT FERTILITY, GENETIC RISK, AND FAMILY BUILDING: AYA ONCOLOGY PATIENT PERSPECTIVES

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Background: Adolescent and Young Adult (AYA) oncology patients have identified having children as an important future goal. However, concerns regarding the impact of cancer on fertility and the perception of cancer as a hereditary disease may influence AYAs' family building decisions. This study explored these topics along with preferences for information among AYA cancer patients.

Methods: As part of an ongoing study to create an intervention aimed at improving knowledge and patient-provider communication misperceptions regarding inherited cancer risk, fertility preservation, and assisted reproductive technologies (ART), patients diagnosed between the ages of 18–39 were recruited from an institutional cancer registry. Interviews were conducted from November 2016–March 2017. Using a pre-interview survey and a semi-structured qualitative interview guide, we explored AYA cancer patients' current experiences, practices, and preferences for information to address genetics, fertility, and reproductive health needs. We examined preferences for patient information/education regarding hereditary cancer and fertility. Interviews were analyzed using content analysis and survey items were summarized with descriptive statistics.

Results: Patients ($n=17$), were majority female (59%) and Non-Hispanic (88%). The majority of patients indicated they had not met with a reproductive endocrinologist (77%) or received genetic counseling (71%). While the majority of patients said they would not personally engage in genetic counseling, they cited potential benefits for other AYA patients including the potential for future cancer risk management and also identified barriers such as worry and fear of the results. Participants indicated a positive genetic test result was not likely to alter their family building decisions. However, few demonstrated awareness about ART options to investigate inherited cancer risk in future offspring. The majority preferred to discuss genetic counseling and ART after the time of diagnosis because they felt this period of time was emotionally charged and confusing to add additional information.

Conclusion: These results identify awareness and attitudinal barriers to providing patients with information regarding fertility, hereditary cancer risk, and the possibility of passing the risk to children. Data from this phase of the study will be used to inform the development of a psychoeducational intervention to address these concerns.

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D026

10:00 AM-11:00 AM

DYSREGULATION IN CORTISOL RHYTHM AMONG MPN CANCER PATIENTS

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Introduction. Myeloproliferative neoplasms (MPNs) are rare hematological malignancies that are characterized by a heterogeneous symptom burden including debilitating fatigue. Abnormal diurnal cortisol rhythms have been found among breast, ovarian, and lung cancer patients, and have been associated with fatigue severity, immune dysfunction, disease progression, and earlier mortality. Alterations in the cortisol rhythm may indicate an immune-hypothalamic-pituitary-adrenal axis disturbance and may contribute to fatigue among MPN patients. The purpose of this abstract is to present findings on diurnal cortisol profiles of MPN patients from ad-hoc analyses at baseline from a pilot study that examined the feasibility of remotely collecting saliva samples prior to an online yoga intervention.

Methods. MPN patients were recruited nationally through internet-based strategies (e.g. social media, email listservs). Salivary collection instructions and materials were mailed to participants to collect saliva at four different time points (upon awakening, 30 min after waking, noon, and bedtime) over the course of one day prior to the yoga intervention. Saliva samples were mailed for cortisol content analysis. The area under the curve (AUC-indicator of slope) of MPN patients was calculated using the trapezoidal formula with all four cortisol values and compared to a normative AUC derived from data collected in a US sample of adults.

Results. Sixty-two MPN patients enrolled into the study, 34 were randomized into the yoga group, and 15 returned saliva samples at week 0. Visual inspection of individual cortisol curves showed a flattened cortisol profile in five MPN patients that lack the typical rise observed 30 minutes after waking in healthy populations. Statistical analysis revealed that the overall AUC of MPN patients was significantly lower compared to a normative AUC (MPN $M=2.42$, $SD=0.93$ $\mu\text{g/dL}$ vs. normative $M=3.33$ $\mu\text{g/dL}$; $p=0.002$).

Discussion. Similar to previous studies in other cancer populations, MPN patients showed alterations in cortisol rhythm. Larger clinical trials are needed to confirm these results and to investigate the role of cortisol dysregulation in symptom severity, disease progression and prognosis of MPN cancer patients. Cortisol stabilization may offer a unique therapeutic target in the management of MPN symptom burden.

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D027

10:00 AM-11:00 AM

EDUCATING IMMIGRANT POPULATIONS ABOUT HPV: HEALTH EDUCATORS' READINESS TO TACKLE HEALTH LITERACY CHALLENGES

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Background: Human Papillomavirus Virus (HPV) and HPV related cancers are higher among immigrants, especially those from Africa, Latin America, and the Caribbean. Limited health literacy is also more prevalent among immigrant groups. Community and parental education are central to HPVV facilitation and improvements, but there is a dearth of research on health educators' understanding of how to educate populations with health literacy deficits. The purpose of this study was to assess the health literacy knowledge and experience of advanced health education students.

Methods: A modified Health Literacy Knowledge and Experience Survey (HL-KES) was used to collect data from 250 junior and senior students who reported an intention to take the Certified Health Education Specialists (CHES) examination. Univariate and bivariate (Spearman rho correlations) analyses were conducted.

Results: Composite score on the 29-item knowledge scale ranged from 5–28. Most students (84%) scored below 70%, and only five percent of the sample scored above 80%. Majority of students reported “never” or only “sometimes” engaging in experiences related to health literacy, even though 94% of students reported HL was emphasized in their training program. There was a significant negative correlation between health literacy knowledge and health literacy experience ($\rho = -.189$, $p < .05$).

Conclusion: The results suggest health education students have deficient health literacy knowledge and limited opportunities to develop practical health literacy experience. Increasing HPV knowledge and HPVV in immigrant populations demand an ability to educate and facilitate communities with varying health literacy skills. Interventions to optimize cancer prevention and reduce HPV related cancer disparities should also examine the health literacy competence of health professionals such as health educators. Health education professional programs may also need to revise their curricula to address health literacy deficiencies in course offerings.

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D028

10:00 AM-11:00 AM

EFFECTS OF EDUCATION LEVEL ON PSYCHOLOGICAL SYMPTOMS IN CANCER PATIENTS

Natasia Adams, MA, MPH¹, Marcus Alt, Ph.D.², Elizabeth Muenks, Ph.D.²¹University of Kansas, Lawrence, KS; ²University of Kansas Health System, Department of Psychiatry and Behavioral Sciences, Kansas City, KS**TITLE:** Effects of Education Level on Psychological Symptoms in Cancer Patients**PURPOSE/BACKGROUND:** Research has clearly established that individuals diagnosed with cancer are susceptible to an array of psychological symptoms. As a result, cancer care is increasingly incorporating supportive services and psychological support for psychosocial stressors. Although literature has considered multiple predictive factors, there has been little examination into the relationship between education level on psychological distress in cancer patients. The purpose of the current study is to examine differences in reported symptoms of anxiety, depression, sleep concerns, and cognitive complaints across individuals with differing education status.**METHODS:** We utilized the Patient-Reported Outcomes Measurement Information System (PROMIS) survey to evaluate reported symptoms related to anxiety, depression, sleep concerns, and cognitive complaints. PROMIS surveys were collected from 166 cancer patients from an NCI-designated cancer center. Education status was captured through demographic information provided by patient.**RESULTS:** Majority of the participants were female (73%) and had a mean age of 51.37 (SD=13.90). A statistically significant difference between different levels of education and reported depressive symptoms was found. Post-hoc tests indicated that those with less than high school education level (25.89 +/- 6.05) reported more depressive symptoms compared to those who identified having a Bachelors degree(17.85 +/- 7.60) or above. A similar trend was seen in individuals with a high school education (22.8 +/- 9.05) reporting more depressive symptoms than those with a graduate/professional degrees. We found no other statistical significance differences between reported symptoms among differing levels of education.**CONCLUSIONS:** Our results suggest that those with less than high school and high school level of education may be at a higher risk of experiencing depressive symptoms. This could be because of other contributing factors, such as financial strain, transportation, childcare, health literacy, etc, increasing the likelihood of depressive symptoms. Regardless, individuals with less than high school or high school education may benefit from psychosocial interventions aimed at addressing depressive symptoms early on as a preventative strategy. Future research should continue to explore the relationship between distressing symptomatology and demographic information to identify populations at higher risks, allowing for implementation of preventative psychosocial interventions.**CORRESPONDING AUTHOR:** Natasia Adams, MA, MPH, University of Kansas, Lawrence, KS; n191a081@kumc.edu

D029

10:00 AM-11:00 AM

FACTORS ASSOCIATED WITH FREQUENCY OF SEXUAL ACTIVITY OVER TIME AFTER PROSTATECTOMY

Kelsey Sewell, Ph.D.¹, Heather Kruse, Ph.D.¹, Donald Strassberg, Ph.D., ABPP², Christopher Dechet, MD³¹University of Kansas Health System, Kansas City, KS; ²University of Utah, Salt Lake City, UT; ³University of Utah, Huntsman Cancer Institute, Salt lake City, UTIntroduction Prostate cancer is one of the most common cancers in men. A known side effect of treatment is impact on sexual functioning. Sexual activity after prostate cancer treatment has not yet been directly examined through measurement over time. This exploratory study sought to answer the following research question: After prostatectomy, what between-subjects factors account for differences in men's frequency of sexual activity over time? Methods Participants were recruited from Huntsman Cancer Institute (HCI) and included 527 men preparing for prostatectomy. Prior to treatment and up to 9 times across 5 years, participants were administered the Sexual Functioning subscale of the long version of the Expanded Prostate Cancer Index Composite. The outcome variable was frequency of sexual activity in the past 4 weeks on a 1 (none at all) to 5 (daily) scale. Results Multilevel modeling procedures were used. Results for the intercept suggested that the average post-treatment baseline level of sexual functioning after surgery was 1.96 (as measured by the 100-point EPIC subscale). For the intercept (i.e., post-treatment baseline), there were significant main effects of age ($B = -.02$, $SE = .005$, $p < .001$), degree of nerve sparing ($B = .38$, $.10$, $p < .001$), and pre-treatment sexual activity ($B = .43$, $SE = .04$, $p < .001$). None of the level-2 variables were significantly associated with the trajectory of men's rate of sexual activity across time. Conclusion Thus, results suggested that younger men with higher pre-treatment sexual activity who had nerve sparing procedures had higher rates of sexual activity early after surgery than did other men. These differences in rates of sexual activity did not remain significant over time. This has clinical implications for improving the accuracy of the information provided to men about what to expect after surgery.**CORRESPONDING AUTHOR:** Kelsey Sewell, Ph.D., University of Kansas Health System, Kansas City, KS; kelseys@kumc.edu

D030

10:00 AM-11:00 AM

FACTORS ASSOCIATED WITH MONTHLY RATES OF SEXUAL ACTIVITY AFTER PROSTATECTOMY

Kelsey Sewell, Ph.D.¹, Heather Kruse, Ph.D.¹, Donald Strassberg, Ph.D., ABPP², Christopher Dechet, MD³¹University of Kansas Health System, Kansas City, KS; ²University of Utah, Salt Lake City, UT; ³University of Utah, Huntsman Cancer Institute, Salt lake City, UTIntroduction Sexual activity after prostate cancer treatment has largely been ignored in the literature. This exploratory study sought to answer the following research question: After prostatectomy, is there a monthly association across time between time-varying factors (i.e., level of desire, perceived erectile ability, perceived orgasm ability, confidence in ability to satisfy one's partner, and use of sexual aids) and the frequency of sexual activity? It was hypothesized that the within-person monthly variation of the time varying covariates (TVC) would be associated with a similar monthly change in the frequency of sexual activity. Methods Participants were recruited from Huntsman Cancer Institute (HCI) and included 527 men preparing for prostatectomy. Prior to treatment and up to 9 times across 5 years, participants were administered the Sexual Functioning subscale of the long version of the Expanded Prostate Cancer Index Composite, and were asked about sexual aid use (e.g., PDE-5 inhibitor) and to rate their confidence in their ability to please their partner (1–5 scale). The outcome variable was frequency of sexual activity in the past 4 weeks on a 1 (none at all) to 5 (daily) scale. Results Multilevel modeling procedures were used. Each of the TVCs were significant in the final model, suggesting that on those months when a given man used sexual aids ($B = .20$, $SE = .04$, $p < .001$) and/or had a 1-unit increase above his average levels of desire ($B = 0.15$, $SE = .21$, $p < .001$), confidence in satisfying his partner ($B = .05$, $SE = .02$, $p < .05$), perceived orgasm ability ($B = .23$, $SE = .04$, $p < .001$), and/or perceived erectile ability ($B = .11$, $SE = .04$, $p < .01$), he had a corresponding increase in frequency of sexual activity. Further, the slope of time in months was significant ($B = .003$, $SE = .001$, $p < .05$), suggesting that in addition to the monthly varying association between the TVCs and sexual activity, there was a steady, slight improvement over time in men's frequency of sexual activity. Conclusion Thus, results suggested that there is there a monthly association across time between time-varying factors and the frequency of sexual activity, as well as a slight improvement over time. This has clinical implications for assisting couples with sexual intimacy and expectations after surgery.**CORRESPONDING AUTHOR:** Kelsey Sewell, Ph.D., University of Kansas Health System, Kansas City, KS; kelseys@kumc.edu

D031

10:00 AM-11:00 AM

HUMAN PAPILLOMAVIRUS VACCINATION INITIATION AMONG FOREIGN-BORN WHITE, BLACK, LATINA, AND ASIAN YOUNG ADULT U.S. WOMEN

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Background: Foreign-born women are more likely to live with and die from cervical cancer but less likely to have initiated human papillomavirus (HPV) vaccination compared to U.S.-born women. Although foreign-born women come from diverse racial/ethnic backgrounds and HPV vaccination varies in relation to race/ethnicity, no study has assessed how HPV vaccine uptake relates to both nativity status and race/ethnicity among U.S. girls and women.

Methods: Using 2011–2015 National Health Interview Survey data, we used logistic regression to test for an interaction between nativity status and race/ethnicity in relation to HPV vaccination initiation ($p < 0.00001$) among U.S. women aged 18–31 years. We assessed differences in the odds of HPV vaccination initiation between foreign-born white, black, Latina, and Asian women and U.S.-born white women and between foreign-born women and U.S.-born women in each racial/ethnic group, adjusting for sociodemographic factors. We then included health insurance status and usual source of care in the models to ascertain whether these factors may help explain observed disparities.

Results: The overall prevalence of HPV vaccination initiation among U.S. women aged 18–31 years was 33.2%. Foreign-born white ([odds ratio=] 0.64; [95% confidence interval:] 0.45–0.91), Latina (0.39; 0.16–0.95), and Asian (0.25; 0.09–0.71) women had significantly lower adjusted odds of HPV vaccination initiation compared to U.S.-born white women. Moreover, foreign-born women had significantly lower adjusted odds of initiating HPV vaccination relative to their U.S.-born counterparts among white (0.64; 0.45–0.91), black (0.58; 0.38–0.87), Latina (0.47; 0.38–0.58), and Asian (0.29; 0.20–0.43) women. Including health care factors in the models attenuated the odds ratios comparing foreign-born Latina and Asian women and U.S.-born white women as well as the odds ratios comparing foreign-born black and Asian women and their U.S. counterparts.

Conclusions: The association between nativity status and HPV vaccination initiation varies across and within racial/ethnic groups. Foreign-born Latina and Asian women may be particularly underserved as a result of a lack of access to health insurance and a usual source of care. Tailored interventions are needed to facilitate access to HPV vaccines and help prevent cervical cancer among foreign-born women from diverse racial/ethnic backgrounds.

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D032

10:00 AM-11:00 AM

IDENTIFICATION OF AREAS OF PATIENT NEED USING THE CANCER SUPPORT SOURCE™ PROGRAM

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Understanding, screening, and providing resources for quality of life factors and psychosocial distress have become an important area of focus in cancer care. Psychosocial distress prevalence rates range from 30% to 40%, the magnitude of distress intensity varying from cancer treatment side effects, disease progression, and individual states and traits. Elevated psychosocial distress levels increase the risk of developing clinical levels of depression and anxiety, immune suppression; lengthened hospital stays, increased treatment costs, and overall impacting suicidality, morbidity, and mortality rates. Clearly, measuring and addressing the psychosocial needs of cancer patients is crucial for their quality of life.

The Cancer Support Source™ (CSS) has been widely implemented for psychosocial distress screening in 100 community affiliates and outpatient treatment centers across the nation. Orlando Health UF Health Cancer currently uses the CSS as a standard of clinical care for all patients screened for psychosocial distress. This study investigated the underlying factor structure of the 25-item CSS using a sample of 332 patient data responses from the Cancer Center, the only one in Central Florida to be recognized by the State of Florida as a Cancer Center of Excellence. The goal was to explore the underlying factor dimensions to facilitate and optimize clinic operations for the utilization of distress screening. A PCA (an exploratory, dimension reduction approach) identified five coherent factors: Factor 1 (Emotional Distress/CSC Referral) 14 items, Factor 2 (Physical Health Concerns/Medical Clinic Referral) 5 items, Factor 3 (Resource Needs/Case Management Referral) 4 items, Factor 4 (Reproductive Health) 1 item, and Factor 5 (Substance Use) 1 item.

Results indicated the 25-item CSS has meaningful, underlying dimensions. Further work is underway to develop easily scored Referral subscales to ascertain more parsimonious areas for referral presented by the cancer patient population. The 25-item CSS could be refined and enhanced to include Referral subscales to better identify areas of referral for each individual patient that is screened for psychosocial distress.

These findings provide an opportunity to impact patient care, patient experience, and resource allocation in cancer care in a community or hospital setting using this psychosocial distress screening instrument.

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D033

10:00 AM-11:00 AM

ILLNESS PERCEPTIONS AND PERCEIVED STRESS IN PATIENTS WITH ADVANCED CANCER

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Background/Objective: According to the Common Sense Model of Self-Regulation of Health and Illness, when a person is faced with a perceived threat, they make assumptions about their illness which influences treatment decisions. The Life Course theory also puts an individual's life within a historic, social, and cultural context. The aims of this study were to (1) describe perceived stress and illness perception according to a patients' demography and (2) examine whether duration since the cancer diagnosis influenced perceived stress and/or illness perception.

Methods: Participants were administered a battery of questionnaires that included a Sociodemographic Questionnaire, the Illness Perception Questionnaire, Brief Version (Brief-IPQ), and the Perceived Stress Scale (PSS). Descriptive statistics, Pearson correlations, and ANOVA were performed to test hypotheses. A total score on the Brief-IPQ represents degree of threat, wherein a higher score demonstrates increased perceived threat.

Results: Of the 627 patients enrolled in the study, the mean age at cancer diagnosis was 62 (SD=11); the majority of patients were male (63%) and Caucasian (91%). Thirty-six percent of patients had been diagnosed with cancer within the past month and 64% had received a diagnosis greater than one month prior to the administration of the questionnaires. The mean PSS score was 21.9 (S.D.=8.3) which is higher than the mean for the general population. The mean IPQ score was 48.7 (S.D.=19.5). Time since diagnosis was not related to the total PSS score [F(1,545)=1.286, p=0.257] or to IPQ [F(1,489)=0.250, p=0.617]. The PSS and IPQ were correlated ($r=0.234$, p).

Conclusions: Our findings suggest that people who perceive their illness as more threatening experience increased rates of stress. Alternatively, those who have high levels of stress may also perceive their illness as more threatening. The prospective study of the link between perceived stress and illness perception is warranted to determine if reducing an individuals' stress may improve their illness perception.

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D034

10:00 AM-11:00 AM

MINIMIZING DIFFERENTIAL ATTRITION IN A LONGITUDINAL STUDY OF LUNG CANCER PATIENTS ON ACTIVE ONCOLOGIC TREATMENT

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Background: Participant attrition is important to understand and address, particularly if participants who discontinue in a study differ systematically on demographic, medical, or psychological characteristics, as compared to participants who complete all phases of the study (i.e., differential attrition). Underrepresented groups in oncology research (e.g., racial/ethnic minorities) evidence high rates of attrition, and strategies (i.e., flexibility for participants, collaboration with medical team, fostering relationships, minimizing financial and transportation burden) have been suggested by researchers to reduce disparities in research participation. However, less is known about whether these strategies mitigate differential attrition. The current study describes a 12-week longitudinal study in lung cancer patients on active oncologic treatment. The aforementioned strategies were implemented in this study a priori to prevent differential attrition. As such, we aim to evaluate demographic characteristics (i.e., age, education, race/ethnicity, socioeconomic status [SES]), medical information (i.e. cancer stage, time since diagnosis), and symptoms (i.e., depressive symptoms, cancer-related anxiety, bothersome physical symptoms) as predictors of attrition.

Method: Participants (n=82; 52% male, mean [SD] age = 64.0 [10.4]) were men and women receiving medical treatment for lung cancer. Participants completed questionnaires on sociodemographic and medical information and validated measures of depressive symptoms, cancer-related anxiety, and physical symptoms at study entry. Logistic regression determined whether demographic characteristics, medical information, and physical and psychological symptoms predicted attrition. Predictors were entered simultaneously to assess each predictor's independent contributions to participant attrition. Zero-order relationships between predictors and attrition were also explored with logistic regression.

Results: No predictor was associated significantly with attrition (LR $\chi^2 = 8.16$, $p = .518$, $R^2 = .18$), despite potentially meaningful odds ratios for race/ethnicity and SES. Additionally, each zero-order logistic regression indicated nonsignificant relationships between each predictor and attrition ($ps > .106$).

Conclusions: No demographic, medical, or symptom variable significantly predicted attrition, which is inconsistent with previous research. It is possible that the strategies implemented to address differential attrition reduced participant burden. Experimental research is needed to strengthen causal inference for these claims.

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D035

10:00 AM-11:00 AM

PHYSICAL ACTIVITY AND ANNUAL MEDICAL OUTLAY IN U.S. COLORECTAL, BREAST AND PROSTATE CANCER SURVIVORS

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Background: Multiple chronic conditions in cancer survivors are highly prevalent and may increase health care costs for both patients and the health care system. Studies of cancer survivors reveal positive effects of physical activity (PA) on reducing risk of cancer recurrence, other chronic conditions, and secondary cancer. Few nationally representative studies have examined how physical activity levels have affected survivors' annual economic burden in the United States.

Methods: Leisure-time physical activity data from the National Health Interview Survey was linked to health care expenditure data from the Medical Expenditure Panel Survey data (2008 – 2012). We calculated per-person annual total medical expenditures for identified colorectal, breast, and prostate cancer survivors. We conducted multivariable analyses controlled for survival years and other sociodemographic variables. Generalized linear models were performed to measure correlation between medical expenditure and PA level using STATA 14. All analyses considered the complex survey design.

Results: Of 1,015 cancer survivors sampled, 30% (n=305) adhered to physical activity recommendation, while the other 70% (n=710) did not. Multivariate-adjusted expenditure in adherence group was \$9,108.8 (95% CI 7,410.9–10,806.7) versus 12,899.1 (95% CI 11,450.2–14,348) in non-adherence group. Stratified analyses revealed cancer survivors who adhered to their PA recommendation saved \$4,686.1 (1–5 years' survival time) and \$2,874.5 (11 or more years' survival time) on average for total health care expenditure, respectively.

Conclusions: Analyses of the national representative sample revealed that the economic burden of survivors from the three most prevalent cancers is substantial. Increasing survivor's physical activity to guidelines may reduce U.S. health care expenditure.

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D036

10:00 AM-11:00 AM

PHYSICAL ACTIVITY IN OLDER SURVIVORS: WHAT ROLE DO MULTIMORBIDITY AND PERCEIVED DISABILITY PLAY?

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Background: Older survivors experience physical deterioration from aging and cancer treatment. Physical activity (PA) may mitigate these symptoms but is underutilized. The extent to which physical limitations from chronic conditions ("multimorbidity") affect PA post-diagnosis is not well understood. Further, the role of perceived disability due to these conditions as a factor in PA participation among older survivors is not known. The purpose of this paper is to 1) describe the relationship of multimorbidity and PA in cancer survivors and 2) explore perceived disability relative to PA in older survivors.

Methods: We collected data from multi-site cancer survivors (n=523), identified using the Pennsylvania Cancer Registry, who were mailed a BRFSS-based questionnaire. We created age-related subgroups (e.g., 45–54, 55–64, 65–74, 75+) and calculated a composite score of 7 common comorbidities (e.g., COPD, heart disease) to assess multimorbidity. Perceived disability was assessed by asking participants if multimorbidity limited activities. Logistic regression estimated the association of demographic and behavioral risk factors (e.g., multimorbidity, perceived disability) with PA.

Results: Most respondents were female (62%), older (mean age 66 years; range 45–95 years) and represented diverse cancer sites, including breast (n=132), gynecologic (n=106), prostate (n=111), colorectal (n=95) and lung (n=72) cancer survivors. PA participation was generally high; 68% reported exercise at least once in the past month. However, PA varied by cancer site. Lung (OR=0.41, CI 0.23–0.76) and gynecologic (OR=.55, CI 0.32–0.95) cancer survivors were significantly less likely than breast cancer survivors to report PA. Survivors age 75+ were half as likely (OR=0.51, CI 0.25, 1.05) as younger groups to report doing PA.

Survivors that did not do PA had a higher average multimorbidity score by 0.51 (p<.001). Lung cancer survivors had the greatest multimorbidity (mean score 2.04) compared to survivors overall (mean score 1.24). Most survivors (65%) did not perceive disability limited their activities, but more lung cancer survivors (51%) indicated this was the case than other survivors overall (22%). Survivors that did not perceive themselves as disabled were nearly three times more likely to do PA (OR=2.86, CI 1.9–4.3) than survivors with perceived disability, controlling for covariates.

Conclusion: Multimorbidity and perceived disability were negatively associated with PA and varied by age and cancer site. More Lung and gynecologic survivors perceived themselves as disabled than other survivors. Designing interventions that address multimorbidity and reduce perceived disability, especially for lung and gynecologic cancer survivors, may provide opportunities for these older survivors to use PA to mitigate their symptoms and improve quality of life.

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D037

10:00 AM-11:00 AM

PREDICTORS OF BLACK & WHITE MEN'S WILLINGNESS TO DISCUSS PROSTATE CANCER CLINICAL TRIALS

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Background: Few cancer patients, especially racial/ethnic minorities, enroll in clinical trials (CTs) in the United States, in part due to factors related to patient-physician communication. As part of a larger study on improving minority enrollment in prostate cancer CTs, we report preliminary analyses of how patients' demographics, attitudes, and perceptions predict willingness to discuss a CT with a physician.

Method: Black and White patients of 11 participating physicians at one data collection site (a comprehensive cancer center in Detroit, MI) were recruited if they had \geq intermediate-risk prostate cancer. Baseline surveys assessed: demographics (age, education, income, and race); health literacy; perceived economic burden; trust in physicians; group-based medical mistrust (mistrust in the healthcare system's treatment of one's racial/ethnic group); and willingness to discuss a CT with a physician. Using linear regression, we first assessed the effects of demographics on willingness to discuss a CT; then we tested these effects along with attitudes and perceptions known to covary with demographics including: health literacy, perceived economic burden, trust in physicians, and group-based medical mistrust.

Results: In the first regression model, patients (n=93; 49 Black and 44 White) were more willing to discuss a CT if they were White (B=.56, p=.03), younger (B=-.04, p=.02), and had higher levels of education (B=.15, p=.03); the association with income was not significant. With the inclusion of additional variables in the second regression model, neither race nor education remained significant predictors. Patients were more willing to discuss a CT if they reported less economic burden (B=.31, p=.04) and less group-based medical mistrust (B=-.40, p=.05), suggesting these factors may mediate the effects of race and education on willingness to discuss a CT.

Discussion: After controlling for demographics, patients' willingness to discuss a CT with a physician was associated with perceived economic burden and mistrust in healthcare systems' treatment of members of their racial/ethnic group, which covary with patient race. Findings suggest that to increase Black cancer patient enrollment in CTs, providers and healthcare systems should better address patients' concerns about economic burden and their mistrust in healthcare systems.

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D038

10:00 AM-11:00 AM

PREDICTORS OF HPV VACCINE SERIES COMPLETION AMONG LOW-INCOME HISPANIC ADOLESCENTS: FINDINGS FROM A LONGITUDINAL STUDY

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Background: Cancers caused by human papillomavirus (HPV) occur at disproportionately higher rates among Hispanic men and women. Many of these cancers can now be prevented with HPV vaccination. Although rates of HPV vaccine initiation have been steadily increasing in the United States, the proportion of adolescents who complete the series (receive 2 or 3 doses depending on age at initiation) remains alarmingly low. The purpose of this longitudinal study was to identify predictors of HPV vaccine series completion among low-income Hispanic adolescent girls and boys.

Methods: Data collection took place at a Federally Qualified Health Center in rural southwestern Florida. Children/adolescents (aged 11–17 years) and their caregivers (N=162 dyads) completed the baseline assessment immediately after the child received the first dose of HPV vaccine. The interview assessed demographics, psychosocial (e.g., health beliefs) and cultural (e.g., acculturation) factors, past medical history, and characteristics of the visit when the first dose was administered. HPV vaccine completion status (defined as receipt of 3 doses) was obtained from the child's electronic health record one year after initiation. Predictors of series completion were identified using logistic regression.

Results: One year after initiating the series, 58% (n=94) completed the 3-dose series, 28% received two doses, and 14% received no additional doses. Caregiver predictors of completion included higher self-efficacy and intentions for series completion, as well as knowledge of the number of doses required. Child/adolescent predictors of completion included receiving the first dose at the recommended age (age 11 or 12 vs. 13–17), receiving written information about HPV vaccination, and having a discussion with the doctor about returning for more doses.

Conclusions: Findings suggest several practical strategies for boosting HPV vaccine completion rates. When administering the first dose it is important for health care providers to clarify the number and timing of doses required, provide written information about HPV vaccination, and remind patients about the need to return to the clinic for additional doses. Administering the vaccine when it is routinely recommended (age 11 or 12) and enhancing caregiver self-efficacy and intentions to complete the series may also increase series completion. Ultimately, implementing such practices could serve to reduce disparities in HPV-related cancers.

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D039

10:00 AM-11:00 AM

PSYCHOLOGICAL ADJUSTMENT TO HEALTH CHALLENGES: DO MEN AND WOMEN COPE DIFFERENTLY WITH A DIAGNOSIS OF CHRONIC DISEASE?

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Cardiometabolic diseases and cancer are the most commonly diagnosed diseases worldwide. Other illnesses, such as rheumatism arthritis (RA), are long-standing conditions that reduce physical functioning. There is a general perception that psychological states are permanently altered by having a chronic disease, resulting in increased distress; such distress may be higher in women. Yet, as study participants are often recruited shortly after diagnosis, it is difficult to test if psychological states are permanently altered due to disease onset. We examined Nurses' Health Study women (NHS; aged 30–55 years at baseline) with psychological scales (anxiety 1988/2004; depression 1992/2000; optimism 2004/2012; life satisfaction 2008/2012) at 2 time points and diagnosed with cancer, stroke, diabetes, myocardial infarction (MI) or RA between assessments (case N's range 55 [RA] to 4,200 [cancer] across time frames). To assess burden of multi-morbidity, women diagnosed with more than one illness were categorized as "Multi-diagnosis". Those with no diagnoses were controls ("Healthy"). Linear mixed models tested if distress and well-being levels significantly changed from pre- to post-diagnosis (or over a similar time frame for controls), adjusting for demographics, social support, physical functioning, medication use, year of and time since diagnosis. Inverse probability weights to account for attrition were included in models. Effect sizes (Cohen's *d*) characterized magnitude of change in psychological states between two time points. To explore possible differences by age and sex, similar models were evaluated in younger women (NHSII; aged 25–42 years at baseline) and in men (Health Professional Follow-up Study; aged 40–75 years at baseline). Compared to healthy women, positive states were slightly reduced in older women before and after developing stroke (life satisfaction: $d = -0.25$) or multiple diagnoses (optimism: $d = -0.22$). No other changes in psychological states were evident in older women. Likewise, men solely reported increased depression after stroke ($d = 0.27$) and decreased life satisfaction after multiple diagnoses ($d = -0.29$). Younger women showed more changes, including a moderate increase in depression with multiple diagnoses ($d = 0.39$). Overall, both men and women show little to modest changes in psychological states after a chronic disease diagnosis. Yet, some subgroups may require more clinical attention, including younger women and those with stroke or more than one illness within a few years.

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D040

10:00 AM-11:00 AM

QUALITY OF LIFE AMONG CANCER SURVIVORS BY DELIVERY MODEL OF SURVIVORSHIP CARE: A LONGITUDINAL SURVEY

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Introduction: There were an estimated 15.5 million cancer survivors in the U.S. in 2016, with projected growth to an estimated 20.3 million survivors by 2026. Despite general guidelines for cancer survivorship care, there is still wide variation in care delivery; patient-reported outcomes associated with distinct care delivery systems are unknown. We thus examined differences in patient-reported quality of life (QoL) (physical, emotional, and practical) by three models of cancer survivorship care.

Methods: We conducted a comparative effectiveness research trial, receiving survey responses from $n=991$ cancer survivors at 32 high-performing Commission on Cancer-accredited centers in 2015. There were a total of four data collection time points: baseline (pre-survivorship visit, 1 week post-survivorship visit, 3 months post-baseline, and 6 months post-baseline). Organizational surveys and interviews were used to categorize these 32 sites into one of three survivorship care models: A single consultative survivorship visit with care provided primarily onsite, ongoing survivorship care with visits scheduled at predetermined intervals onsite, and survivorship care embedded into oncology. We used SAS proc Anova to compare the differences in QoL by survivorship care model.

Results: The most common cited baseline physical QoL complaints were pain, fatigue, sleep disturbance, memory, weight change, neuropathy, loss of strength, and hot flashes. The most common emotional complaints were defining a new sense of normal, managing difficult emotions, living with uncertainty, fear of recurrence, managing stress, and having a sense of well-being. The most common practical complaints were financial concerns and medical debt. At baseline, there were significant differences in percentage reporting these common physical complaints by care model, with more physical complaints among the single consultative visit model ($p=0.024$), however at six months there were no significant differences by care model ($p=0.212$). For emotional concerns there were significant differences by model at baseline ($p=0.011$), as well as at 6 months ($p=0.028$), with concerns lowest among the oncology-embedded model. For practical concerns, there were no significant differences by model at baseline ($p=0.725$) or at 6 months ($p=0.123$). Across all models, there were significant reductions in the percentage of items reported as a concern from baseline to 6 months.

Conclusions: While there were differences in self-reported quality of life metrics by care model for both physical and emotional concerns at baseline, only differences in emotional concerns persisted over 6 months. These findings suggest that specialized programs may want to consider how oncology embedded programs are addressing emotional concerns in order to improve survivorship care programs.

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D041

10:00 AM-11:00 AM

REDUCING BARRIERS TO FLEXIBLE SIGMOIDOSCOPY WITH ACTIVE CHOICE OF ENDOSCOPIST: AN EXPERIMENTAL ONLINE SURVEY

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Background: Flexible Sigmoidoscopy (FS) screening has been introduced in England. However, uptake is low. Strikingly, uptake among women is only half that of breast and cervical screening. This might be improved by offering women their preferred choice of the sex of the endoscopist. We tested whether offering an active choice increases intention compared with standard defaults (either male or female endoscopist) or usual care (i.e. no information) in a sample of women who had stated that they did not intend to have FS screening.

Method: 4,358 women aged 35–54 years living in England took part in an online survey. After being informed about FS screening, 1,060 (24.3%) stated that they did not intend to participate. These participants were randomised to one of four experimental conditions with different information about the sex of the practitioner: 1) usual care (unknown sex); 2) male endoscopist default 3) female endoscopist default and 4) active choice (the patient can choose the endoscopist). The primary outcome was intention to participate after receiving information on sex of the endoscopist. Respondents also answered comprehension and manipulation checks. We used multivariable logistic regression adjusting for age, employment, socio-economic deprivation, living condition, ethnicity and self-reported health status.

Results: Respondents were mostly White-British (83.6%), married or living with someone (62.4%), working (63.3%) and with low individual social deprivation (42.2%). 1,010 of 1,060 (95.3%) women successfully completed all comprehension and manipulation checks. A large share of women in the active choice group (64.4%) expressed a preference for a female practitioner and there was partial support for our hypothesis. Compared with usual care, active choice and offering a female endoscopist by default significantly increased intention among disinclined women (16.0% vs. 9.3%; OR 1.83; 95%CI 1.06–3.15; Female: 17.9% vs 9.3%, OR 2.08, 95% CI 1.24–3.50). There was no difference between usual care and offering a male endoscopist (9.3% vs. 9.8%; $p > .05$). However, active choice did not increase intentions to have FS screening compared with offering a female endoscopist by default (16.0% vs 17.9%, $p > .05$).

Discussion: While offering disinclined women an active choice of the sex of the endoscopist increased intention, there was no added benefit over simply allocating them a female endoscopist. This suggests that active choice does not outperform standard defaults in settings where the default complies with the dominating preference. Future research should test whether active choice may be more effective in settings where people have more diverse preferences. A Randomised Controlled Trial should test whether providing a female endoscopist improves FS screening uptake in women.

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D042

10:00 AM-11:00 AM

RESULTS OF AN INTERNET-BASED INTERVENTION TO IMPROVE ADHERENCE AND PSYCHOSOCIAL OUTCOMES IN CANCER PATIENTS

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Research suggests interventions targeting distress and adherence in cancer patients may improve their physical and emotional health as well as treatment outcomes. Such interventions exist and are effective but are underused due to patient and organizational roadblocks; few studies examine adherence in this population. The present study piloted an Internet-based intervention to address many of these issues. The study asked 45 cancer patients in active treatment to use this intervention for 3 months, assessing distress and adherence at baseline and post-intervention using the Depression Anxiety Stress Scales (DASS) and Morisky Medication Adherence Scale (MMAS) respectively. Usability and acceptability were also examined. The intervention included psycho-education (information on problem solving therapy and mindfulness), brief intervention (worksheets and recordings relevant to the education), regimen planning tools (electronic reminders for appointments and medication), and a social networking component. Results suggested good acceptability and usability with limited effectiveness. Specifically, 70 of the 86 subjects approached for participation (81%) consented to the study and, of those who completed the study, the majority at least somewhat agreed (rating of ≥ 3 on a Likert scale of 1 to 5) that the intervention was easy to use and navigate, that the content was helpful, and that they were at least somewhat satisfied with the site. Data suggests the education and brief intervention components were used most and, on average, received the highest possible rating for usability and helpfulness. The number of subjects who completed the study, however, was lower than expected (35%) and there were no significant differences from baseline to post-intervention in the measures of adherence (MMAS ($t(24) = -1.38, p = .18$)) or distress (DASS ($t(24) = 0.41, p = .68$)). A possible ceiling effect (e.g., distress and adherence were minimal at baseline); a preference for using commercial products whose functionality were replicated in this intervention; and feedback suggesting the content was better suited for post-active treatment may explain the limited effectiveness. Overall findings suggest potential for this intervention but that more focus on education and brief intervention is required while integrating existing commercial products to reduce redundancies. The latter finding also highlights the utility of the emerging trend of academic-industry partnerships.

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D043

10:00 AM-11:00 AM

SIGNS VERSUS SYMPTOMS: AN INVESTIGATION OF COGNITIVE DYSFUNCTION IN CANCER PATIENTS AND HEALTHY CONTROLS

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Introduction: Cognitive dysfunction is common in cancer patients. Patient perceptions of cognitive functioning are readily assessed via self-report measures such as the Patient-Reported Outcomes Measurement Information System (PROMIS) Cognitive Function scale. However, it is unclear whether cancer patients' responses on PROMIS Cognitive Function are a stronger indicator of objective cognitive functioning or emotional health. The current study examines the relationships between PROMIS Cognitive Function, objective cognition, and emotional health in patients with chronic lymphocytic leukemia (CLL) and non-cancer controls.

Methods: Forty-four (44) patients with CLL were evaluated at baseline in a phase Ib/II trial of obinutuzumab, ibrutinib, and venetoclax. An equal number of age- and gender-matched non-cancer controls provided data for comparison. All participants completed measures of perceived cognitive functioning (PROMIS Cognitive Function), objective cognitive functioning [NIH Toolbox Auditory Verbal Learning Test (AVLT), Controlled Oral Word Association Test (COWAT)], and emotional health (Patient Health Questionnaire-9, Generalized Anxiety Disorder-7, Profile of Mood States). Bivariate correlations examined relationships among these constructs. Independent-samples *t*-tests examined differences between patients with CLL and non-cancer controls.

Results: PROMIS Cognitive Function was significantly correlated with depressive symptoms, anxiety symptoms, and mood disturbance in patients with CLL ($\rho = 0.61, p < 0.001$; $\rho = 0.40, p < 0.001$; $\rho = 0.69, p < 0.001$, respectively) and non-cancer controls ($\rho = 0.53, p < 0.001$; $\rho = 0.78, p < 0.001$; $\rho = 0.73, p < 0.001$, respectively). Correlations between PROMIS Cognitive Function and objective cognitive measures were non-significant in both samples ($ps > 0.05$). Non-cancer controls outperformed patients with CLL on objective measures of cognition [AVLT: $t(86) = 3.020, p = 0.003$; COWAT: $t(86) = 2.92, p = 0.004$], but there were no significant differences on PROMIS Cognitive Function or measures of depressive symptoms, anxiety symptoms, or mood disturbance. Six patients with CLL (13.6%) exhibited cognitive impairment (z -score ≤ -1.5) on at least one objective cognitive measure, compared to one non-cancer control participant (2.3%).

Conclusion: PROMIS Cognitive Function is associated with depressive symptoms, anxiety symptoms, and mood. There is little evidence to support the relationship between PROMIS Cognitive Function and objective cognitive measures. Clinicians should consider PROMIS Cognitive Function to be reflective of emotional health. Assessment of cancer-related cognitive changes should be based on objective measures.

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D044

10:00 AM-11:00 AM

SMOKING STATUS DIFFERENCES IN PARTNER SUPPORT FOR SMOKING CESSATION IN CANCER PATIENTS

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Introduction: Continued smoking after a cancer diagnosis is associated with treatment complications, disease recurrence, and second primary cancers. Yet, a significant proportion of patients continue smoking such that a need to identify factors associated with smoking cessation following cancer diagnosis exists. In the general population, prior studies have examined the impact partner/spousal support has on smoking cessation. Positive behaviors, such as reinforcement, from a partner/spouse increase patients' abstinence rates, while negative behaviors, such as nagging, decrease quitting and increase relapse rates. We examined partner/spouse smoking status differences in expected partner support for smoking cessation among newly diagnosed cancer patients.

Method: Newly diagnosed cancer patients (≤ 4 months of diagnosis) who live with a partner/spouse ($N = 90$) completed baseline questionnaires assessing demographic characteristics, smoking history and type of smoking cessation support they expect to receive from a spouse/partner (items from Partner Interaction Questionnaire (PIQ); Cohen & Lichtenstein, 1990; range = 0 to 4; higher scores indicate behaviors expected more frequently) as part of a larger, ongoing study.

Results: Patients' median age was 56, 59% were female, and 80% identified as non-Hispanic White. Patients were recruited from various cancer clinics: breast (26%), thoracic (24%), GU (22%), GI (12%), head and neck (9%), lymphoma (3%), and gynecologic (3%). In terms of partner/spouse smoking status, 64% ($N = 58$) were identified as current smokers. Partner/spousal smoking status does not impact expected *positive* cessation support, ($t(83) = 0.986, p > 0.05$). However, partner/spousal smoking status did significantly impact expected *negative* cessation support; patients with partners/spouses identified as current smokers expected more negative cessation support (PIQ $M = 9.9, SD = 5.4, N = 29$) than patients with nonsmoking partners/spouses ((PIQ $M = 7.5, SD = 4.8, N = 57$), $t(84) = 2.117, p < 0.05$).

Discussion: Partner/spousal smoking status may be an important driver of expected cessation support, such that patients with nonsmoking partners/spouses are more likely to expect negative cessation support. These preliminary findings suggest that greater education concerning cessation support preferences may be important, particularly for nonsmoking partners/spouses.

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D045

10:00 AM-11:00 AM

SOCIODEMOGRAPHIC VARIATION IN A NOVEL BEHAVIOURAL RISK FACTOR INDEX FOR CANCER

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Background: Modifiable behavioural and environmental risk factors are estimated to cause 43% of cancers in the UK. Behavioural risk factors often cluster within individuals; particularly those from socioeconomically deprived backgrounds, exacerbating cancer risk. Previous studies of behavioural risk have typically summed the number of exposures. We propose a novel behavioural risk factor index which accounts for the relative contribution of each behaviour to cancer incidence by creating a weighted composite risk score.

Methods: A population-representative sample of English adults (n=2027; aged 18–70 years) participated in computer-assisted face-to-face surveys. Data were used to determine adherence to UK cancer prevention guidelines for tobacco smoking, body weight, alcohol, fruit and vegetable intake, and physical activity. Two indices were compared. First, the number of behavioural risk factors was summed (summary index). Second, a novel behavioural risk factor index was created by weighting the scores for individual behaviours according to their relative contribution to cancer incidence (weighted index). Knowledge of cancer risk factors was assessed using a subscale from the Cancer Awareness Measure. We also collected data on age, sex, ethnicity, marital status, education, social grade, self-rated health and cancer experience.

Results: In unadjusted analyses, male sex, older age, single relationship status, White ethnicity, lower education, lower social grade, poorer self-rated health and lower knowledge of cancer risk factors predicted higher scores on the weighted index (all p's <.05). These associations remained in adjusted regression models. For the summary index, sex, age, ethnicity, education, social grade, self-rated health and risk factor knowledge were also associated with higher scores (all p's <.05). However, age, sex, education and social grade were no longer statistically significant predictors after adjusting for self-rated health and cancer risk factor knowledge in multivariate regression analyses.

Conclusions: Independent of knowledge, there was greater demographic variation in behavioural risk when the severity of risk conferred by each type of behaviour was taken into account. We had not anticipated an association with White ethnicity, which deserves further study. A more nuanced understanding of demographic variation in behavioural risk profiles could inform population initiatives driven to reduce cancer incidence.

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D046

10:00 AM-11:00 AM

SPRAY TANNING PREVALENCE AND MOTIVATIONS AMONG UNDERGRADUATE AND GRADUATE STUDENTS AT A SOUTHEASTERN U.S. UNIVERSITY

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Background: Rates of melanoma have risen dramatically in the United States in recent decades, particularly among young women. A major contributing factor for this is exposure to ultraviolet radiation (UV) through indoor and outdoor tanning. Sunless tanning methods, such as spray tanning (ST), have been promoted as safer alternatives to UV tanning. While ST appears to be increasingly popular, its adoption as an alternative to UV tanning is still largely undefined. This study assessed ST prevalence and associated factors among undergraduate and graduate students at the same university.

Methods: Students at a public university in the southeastern United States were invited to complete an online survey about their participation, knowledge, and attitudes regarding indoor, outdoor, and spray tanning. Univariate and multivariate analyses were performed to identify factors associated with ST among undergraduate and graduate students, respectively.

Results: 566 of 2,668 (21.2%) of undergraduate and 373 of 1193 (31.3%) of graduate students reported ever ST. Variables significantly associated with increased likelihood of spray tanning in undergraduate and graduate students included: self-reported outdoor tanning (OR=6.61, 95% CI [4.95, 8.83], and OR=15.40 [11.49, 20.65], respectively); current indoor tanning (OR=2.24 [1.78, 2.82] and OR=12.47 [3.91, 39.77]); concern about skin damage (OR=2.12 [1.72, 2.62] and OR=1.78 [1.35, 2.34]); agreement that, "tanning beds can definitely cause skin cancer" (OR=1.60 [1.23, 2.06] and OR=1.87 [1.33, 2.63]); and family history of melanoma (OR=1.48 [1.05, 2.07] and OR=2.26 [1.56, 3.26]).

Conclusions: Both student populations demonstrated substantial engagement in ST. Variables with the strongest association with ST were engagement in outdoor and indoor tanning, suggesting that ST is used as a supplement to, rather than a substitute for, UV tanning. Future work is needed to examine tanning methods in combination and to examine the effectiveness of interventions promoting sunless tanning methods as alternatives to UV tanning. Additionally, future research should explore the dissonance between reported perceptions and attitudes regarding the dangers of tanning behaviors despite continued participation.

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D047

10:00 AM-11:00 AM

TAKING A STEPPED CARE APPROACH TO TREATING INSOMNIA IN CANCER SURVIVORS

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Background: Cognitive-behavioral therapy for insomnia (CBT-I) is highly effective and widely endorsed as a preferred first-line treatment. Unfortunately, cancer survivors are unlikely to receive CBT-I, even in centers delivering specialized cancer survivorship care. Their untreated insomnia is associated with a broad range of physical and psychological health consequences. Treatment barriers include a lack of trained clinicians, as well as standard treatment duration and format (6–8 individual sessions). To improve CBT-I access, we delivered insomnia therapy using a stepped care model, with treatment intensity increased only for survivors not responsive to initial treatment.

Methods: 41 survivors (mean age=54 years; 91% female) with insomnia enrolled. They were primarily breast (61%) and blood cancer (28%) survivors, an average of 11.3 years post-diagnosis. Participants completed the Insomnia Severity Index (ISI) at baseline before initially receiving the low-intensity treatment: a single, 30-minute sleep hygiene education session. After 4 weeks, they completed the ISI again. If their insomnia was not resolved by low-intensity treatment (ISI <12), they were offered the high-intensity treatment: a three session CBT-I group program (60 minutes/session) developed for cancer survivors. Participants completed the ISI again prior to the CBT-I groups, and 4 weeks later.

Results: Twenty-one (51%) of the 41 survivors who completed the low-intensity treatment were no longer experiencing clinically elevated insomnia (ISI score <12). Of the 20 survivors whose insomnia persisted, to date 9 have received the high-intensity treatment, with 6 (67%) no longer experiencing clinically elevated insomnia following therapy. Effect sizes for insomnia symptom improvement was large at 4-week follow-up for both the low (d=1.1) and high-intensity (d=1.2) treatments.

Conclusions/Implications: Both low and high-intensity therapies are efficacious at treating cancer survivors' insomnia. Data from this ongoing trial will investigate how these gains are maintained over time. The efficacy of a brief sleep hygiene education intervention at treating insomnia in cancer survivors has meaningful dissemination implications as it can be delivered by a non-sleep specialist, and could be developed as a mobile intervention. However, it is worth noting that almost half of survivors required more intensive treatment. Future research should continue to explore ways of leveraging the relatively scarce insomnia expertise to optimize treatment access for cancer survivors.

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D048

10:00 AM-11:00 AM

TECH-BASED APPROACH TO INFORMING MHEALTH PRODUCT CREATION: PARENT PERSPECTIVES OF HPV USING ONLINE SYNCHRONOUS FOCUS GROUPS

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Background: While Healthy People 2020 has established a goal of 80% completion for adolescent HPV vaccination (13–15 years), series completion rates in a large, primarily insured pediatric clinic network in Houston, TX were 53% in 2016. Understanding attitudes, perceptions and vaccination decision-making processes of parents is an important step in assessing needs to inform vaccine promotion strategies that can be delivered via mHealth applications. Synchronous online focus groups offer a qualitative research method for assessing attitudes and perceptions that provides easy reach, convenience, and cost savings without compromising data fidelity.

Objectives: The objectives of the study were to: (1) Determine how parents make decisions related to HPV vaccination, (2) Understand how the clinic network could facilitate vaccination decision-making via a mHealth application, and (3) Evaluate the feasibility of conducting online synchronous focus groups, an emerging qualitative research method.

Research Design: In October 2016, we conducted four Skype, text-based focus groups with parents of adolescent patients aged 11–13 years. Participants were recruited via flyers and targeted requests by network clinical staff and practice managers. Participants were provided an e-gift card as compensation.

Results/Evaluation: Parents (n=22) from 16 of 51 clinics participated in four 60-minute focus groups, with 4–7 participants per group. Participants were 42 years old on average, mostly female (95%), White (59%), had a college or graduate degree (81%), and had private insurance for their child (82%). Parents cited physician recommendation as a major influence on their decision to vaccinate their child. Parents suggested the clinic network could support HPV vaccine decision making by providing: (1) detailed and reliable information about the HPV vaccine, (2) opportunities to discuss HPV vaccine well in advance of the recommended age, (3) extended appointment days/times, and (4) reminders for follow-up doses. Most parents used Skype sometimes or regularly (86%). Of those indicating a preferred focus group format, 54% preferred text-based, 8% preferred video-based, and 38% had no preference. Cost-savings for the project were estimated at \$260 per session.

Conclusions: Themes emerging from the discussions relating to attitudes, barriers and perceptions of HPV vaccination were similar to other published studies. Synchronous online focus groups provided anonymity and convenience for participants and cost-savings for the project.

Future Plans: This research informed the context and design of a HPV-vaccination parent-focused mHealth application that is currently being tested in a randomized trial within the clinic network.

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D049

10:00 AM-11:00 AM

FAMILY RELATIONSHIPS AND INHIBITION CONTROL IN EMERGING ADULTS WITH ADHD

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Background: It is estimated that between 5–10% of adolescents in the United States have been diagnosed with attention-deficit/hyperactivity disorder (ADHD) with subsequent lower levels of inhibitory control and higher stress. This may negatively impact family dynamics and leave ADHD adolescents perceiving their parents as less-supportive, resulting in lower seeking of self-control advice from parents. ADHD emerging adults (18–19) transitioning to university may be particularly influenced by parental support during this transition to independence. Perceptions of high parental support may reduce stress and increase inhibitory control in this transition. We expect perceptions of greater parental support will be associated with better inhibitory control in emerging adults.

Methods: 10 emerging adults aged 18–19 ($M=18.2$, $N=7$ female) with a diagnosis of ADHD completed surveys on their attitudes towards each of their parents and their perception of their overall family functioning, and participated in cognitive testing using the NIH Toolbox to assess inhibitory control, working memory, and processing speed. Additionally, participants completed a semi-structured interview examining their parents' support, their own self-control, and perceptions of how transition to university has affected self-control and family relationships. The interviews were transcribed and coded for factors that decrease the likelihood of the participants turning to their parents for support or advice.

Results: Participants were white (80%), Latino/a (10%), and Asian (10%) and from middle to high income families. The majority of participants (80%) reported overall supportiveness from both father and mother. Performance on the inhibitory control test was negatively correlated with perception of maternal support ($p=.03$), perception of paternal support ($p=.04$), and perception of overall family functioning ($p=.05$). There was no significant effect of family support on working memory or processing speed. Participants who reported low levels of supportiveness from their parents also reported rarely or never turning to one or more parents for support or advice regarding self-control.

Conclusions: Emerging adults with ADHD face special challenges in adjusting to university and independence particularly in terms of inhibitory control. However, contrary to our expectations, greater perceptions of parental support were not associated with better inhibitory control in these emerging young adults. Research indicates higher network support can actually increase stress via feeling of intrusiveness and obligation. It may be that emerging adults view their parents' support as intrusive, rather than helpful. Future work should examine benefits and detriments of parental support.

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D050

10:00 AM-11:00 AM

PARENT-CHILD RELATIONSHIP QUALITY AND PARENTAL MONITORING AS PREDICTORS OF CHILD EXTERNALIZING BEHAVIORS OVER TIME

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Purpose: Increased parental monitoring and better parent/child relationship quality protect adolescents from externalizing behaviors such as substance use and delinquency. Parental monitoring, consisting of child disclosure (CD), parental control (PC), and parental solicitation (PS) of child behavior is a dyadic interpersonal process between parent and child that likely depends on the quality of the relationship. However, it is unclear if the protective effect of parental monitoring differs across levels of parent/child relationship quality and if these effects change across adolescence.

Methods: Children ($N=911$; 52.4% female; grades 6–8) reported on parental monitoring, two aspects of relationship quality (social support, negative interactions), substance experimentation, and delinquent behaviors in four annual assessments. Substance experimentation indexed the number of substances tried (alcohol, tobacco, marijuana, other drugs). Delinquent behavior indexed six problem behaviors (e.g., truancy, property damage). We fit linear mixed-effects regressions, controlling for sex, race, ethnicity, age, and familial drinking problems. Focal terms were main effects and interactions between linear growth in substance experimentation or delinquency, parental monitoring, and relationship quality.

Results: PC protected against substance experimentation, but only in highly supportive relationships. Greater CD predicted less substance experimentation across adolescence. Contrary to our hypothesis, this effect did not vary as a function of relationship quality. More negative interactions with parents predicted increased substance experimentation over time.

For delinquency, greater CD, PS, and PC predicted less delinquent behavior. These strategies also dampened the increase in delinquency across adolescence, but only in highly supportive relationships. Effects did not vary as a function of negative interactions.

Conclusions: Interventions aimed at increasing CD and improving the quality of parent-child relationships may buffer against externalizing behaviors in adolescence. Further, parents who engage in PC as a protective strategy against externalizing behaviors can increase the effectiveness of these strategies by also providing increased social support for their child.

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D051

10:00 AM-11:00 AM

PRENATAL MOTIVATIONAL INTERVIEWING FOR ENHANCING BREASTFEEDING OUTCOMES: FEASIBILITY AND PRELIMINARY FINDINGS

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Introduction: Breastfeeding promotes health and well-being for both mother and infant. Many environmental and individual factors, including psychological ones, affect infant feeding practices. The purpose of this study was to determine the feasibility and effectiveness of a single-session Motivational Interviewing (MI) intervention delivered during the third trimester of pregnancy for enhancing breastfeeding outcomes.

Method: The sample consisted of predominantly rural participants living in North Central Appalachia. Women were recruited through social media, local clinics, and word of mouth. Participants ($N = 81$) completed one in-person session during the third trimester of pregnancy and one follow-up phone call at one month postpartum. Participants were randomly assigned to either the MI intervention or a psychoeducation intervention focused on infant developmental milestones. Pre-post intervention outcome measures included feeding intentions, perceived behavioral control of breastfeeding, perceived importance of breastfeeding, infant feeding knowledge, breastfeeding attitudes and subjective norms, and knowledge of infant development. At one month postpartum, participants completed a phone interview which assessed breastfeeding initiation and current breastfeeding status.

Results: Directly following the intervention, there was a significant effect of the MI intervention on increasing breastfeeding attitudes among primiparous women only ($p < .05$). In addition, at one month postpartum, women in the MI group were more likely to report any current breastfeeding than women in the psychoeducation group, $\chi^2(1, N = 79) = 4.30, p = 0.040, \Phi = .233$. There were no between-group differences on intentions, perceived behavioral control, perceived importance, subjective norms, infant feeding knowledge, knowledge of infant development, likelihood of exclusive breastfeeding, total proportion of feedings that were breast milk, or plans for continued breastfeeding at one month postpartum.

Discussion: Results support the feasibility of a single-session, prenatal MI intervention. Preliminary findings demonstrate MI's effectiveness for increasing the likelihood of any breastfeeding at one month postpartum, and in enhancing breastfeeding attitudes among primiparous women. Future work may benefit from adding electronic communication to reinforce messages of MI interventions. Any future work should target populations facing breastfeeding inequities.

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D052

10:00 AM-11:00 AM

RACIAL/ETHNIC DIFFERENCES IN THE RELATIONSHIP BETWEEN STRESSFUL LIFE EVENTS AND QUALITY OF LIFE IN ADOLESCENTS

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Stressful life events (SLE) impact health because they increase allostatic load and require adaptation. Adolescence is a developmental period that may be disproportionately affected by SLE. The accumulation of SLE has been associated with decreased health related quality of life (HRQOL) among adolescents. This study examined racial/ethnic and developmental differences in the relationship between SLE and HRQOL from pre- to early- to mid-adolescence. Data were from 4,824 participants in the Healthy PassagesTM project, a population-based survey of fifth, seventh, and tenth grade African- American, Latino/a, or White youth from metropolitan cities in the US. HRQOL was measured with PedsQL and SLE with items about family-related SLE (e.g., parent's death, separation, and divorce, family member's injury/illness, residential change, and new child in the household). An autoregressive model with cross-lagged effects revealed that the relationship between SLE and HRQOL was significant across pre-, early-, and mid-adolescence. Further, differences among racial/ethnic groups were significant such that Latino adolescents had a negative association from SLE in pre-adolescence to HRQOL in mid-adolescence. Racial/ethnic differences present in the relationship between SLE and HRQOL need to be considered in prevention efforts aimed at these racial/ethnic groups. For instance, Latino youth may need coping skills training that address negative delayed effects from SLE.

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D053

10:00 AM-11:00 AM

REDUCTION IN BMI Z-SCORE REFLECTS CHANGES IN BODY COMPOSITION IN OBESE CHILDREN

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Childhood obesity continues to be a primary focus related to pediatric disease and health outcomes. BMI z-score changes commonly are used as an indicator of success in childhood obesity treatment programs with clinically meaningful risk factor reduction suggested by reducing BMI z-score by 0.10 or more with increased risk reduction with a BMI z-score reduction of ≥ 0.25 (Ford et al., 2010; Pollestad Kolsgaard et al., 2011). However, BMI z-score reductions do not account for independent changes in body composition.

PURPOSE: To examine the degree in which BMI z-score reductions reflect relative changes in body mass (%WT), body fat percentage (BF%), fat mass index (fat mass (kg)/(height (meters))² (FMI), and lean body mass index (lean body mass (kg)/(height (meters))² (LBMI) in obese children following a 12-week pediatric obesity treatment program.

METHODS: Participants included 47 children (43% boys; mean age = 10.1 ± 1.2 years) with BMI percentile above the 95th percentile (98.0 ± 1.4). Body mass, stature, BMI z-score, BF%, FMI and LBMI were measured at baseline and 12-week post-intervention using a digital scale and GE Lunar Prodigy DXA. BMI z-scores were categorized by clinical significant reductions post intervention ($< 0.10, 0.10 - 0.249, \geq 0.25$) and comparisons were made between body composition measures.

RESULTS: Twenty-one (45%) participants had a BMI z-score reduction ≥ 0.25 and 17 (36%) had a reduction between 0.10 - .249. Significant differences ($p < 0.05$) were found between each clinically meaningful BMI z-score reduction categories for %WT change $< 0.10 (0.19 \pm 2.85), \geq .10 (-3.33 \pm 2.17)$ and (-8.03 ± 3.76) , FMI change $< 0.10 (-0.24 \pm 0.92), \geq 0.10 (-1.34 \pm 0.73), \geq 0.25 (-2.10 \pm 1.06)$, and BF% change $< 0.10 (0.19 \pm 2.04)$ and $\geq 0.25 (-5.23 \pm 2.93)$. There were no significant differences for changes in LBMI across the changes in BMI z-score.

CONCLUSION: At the conclusion of a 12-week pediatric obesity treatment program, clinically meaningful changes in BMI z-score accurately accounted for changes in %WT, BF% and FMI in obese children suggesting BMI z-score reductions may be meaningful in interpreting body composition changes in obese children. Our data, although with a small sample, suggests that a BMI z-score reduction ≥ 0.10 equates to an approximate 3% reduction in body mass, an early literature suggestion to improve health risk in children (Ricchini et al., 1988).

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D054

10:00 AM-11:00 AM

A NOVEL ASSESSMENT FOR UNDERSTANDING THE PARENTAL NICU EXPERIENCE

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Up to 15% of parents in the U.S. have an infant admitted to a neonatal intensive care unit (NICU) each year. NICU infants are at increased risk for neurodevelopmental impairments and medical complications (Wilson-Costello et al., 2005). The ongoing medical complications of the child can impact financial, social, occupational, and recreational aspects of family life (Stephens et al., 2008). Among children, high levels of parental stress and depression have been associated with more behavior problems, poorer social skills, and reduced play with parents (Huhtala et al., 2012). Although infant health is critical for parental and child outcomes, it remains unclear which specific indices can be used to identify parents who may need additional psychosocial services.

The current study developed the first parental report of NICU infant health severity measure to determine how objective infant health indices can be used to identify parents at-risk for negative psychosocial sequelae. Parents ($N = 199$) whose children were discharged from the NICU six months to three years prior, and co-habiting with partner and child since discharge, were recruited via the internet. Most participants were Caucasian (81.91%) and biological mothers of the infant (91.45%). Average parental age was 31.75 years ($SD = 5.34$). Mean gestational age of infants at birth was 31.54 weeks ($SD = 4.64$) and mean birth weight was 1791.54 grams ($SD = 1000.82$). Fifty-four infants were diagnosed with an additional medical condition after discharge (27.4%) and 47 were diagnosed with a developmental disability (23.6%). A hierarchical cluster analysis was conducted to identify parents at low, medium, and high risk for increased stress and greater family burden. Five clusters were identified: cluster 1 ($N = 77$), parents at lowest risk (i.e., least severe infant health, moderate parental stress, low family burden); cluster 2 ($N = 68$), parents at moderate risk (i.e., moderately severe infant, moderate parental stress, moderate family burden); and clusters 3, 4, and 5 ($N = 8$), parents at highest risk (i.e., severely ill infants, high parental stress, high family burden). Follow-up independent t-tests revealed that clusters 1 and 2 differed on nearly all items of infant health. Psychometric analyses will also be reported. Findings highlight how this novel infant health measure can be used to identify which parents would benefit from additional psychosocial services during and following NICU hospitalization.

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D055

10:00 AM-11:00 AM

A TWO SIDED COIN: POSITIVE AND NEGATIVE SOCIAL INTERACTIONS AND HEALTH AMONG POSTPARTUM WOMEN

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Background: Studies suggest that social support is positively related to health of postpartum women. There are cultural traditions that are performed to support women after childbirth, however, in certain situations these traditions may cause negative social interactions and these may cause negative health outcomes. Maternal health after birth may be, in part, the result of the function of social environments in which the mother lives. Objectives: To measure if positive (social support) and negative interactions due to traditions in society, intended for helping the mother, predicts postpartum women's health.

Methods: Jewish ($N=203$) and Arab ($N=202$) women were interviewed one month and four months postpartum. Information regarding health problems, self reported health, social support, social networks, negative social interactions and socioeconomic measures were collected. Factors predicting health problems and self reported health four months after childbirth were identified using multi-variable regression models.

Results: In a linear multivariate regression model both positive social support (Beta -0.23, $p<0.0001$) and negative interactions between the woman and her social surroundings one month after childbirth (Beta 0.28 $p<0.0001$) predicted health problems independently four months after childbirth, after adjusting for perceptions of traditions, type of childbirth, ethnicity and education. When self reported health served as the dependent variable similar results were obtained in a logistic multivariable regression model. For social support the odds ratio was 1.8 (CI 1.30, 2.52) and for negative interactions the odds ratio was 0.53 (CI 0.38, 0.74). Positive social support seems to decrease health and negative interactions seem to improve health.

Conclusions: Traditions and customs intended to give support may have negative health outcomes by increasing exposure to negative social interactions. Health service providers should be aware of the woman's cultural background and consider the needs and preferences of the woman and help them obtain a supportive social environment.

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D056

10:00 AM-11:00 AM

CAREGIVER PERSPECTIVES ON GENE THERAPY FOR CHILDREN WITH SICKLE CELL DISEASE

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Background: Sickle cell disease (SCD) is a genetic blood disorder affecting approximately 100,000 Americans. Currently, the only cure for SCD is hematopoietic stem cell transplantation; available to only 14–19% of patients due to lack of suitable matched donors and access barriers. Gene therapy is a novel approach being tested and may cure SCD while circumventing the need for a matched donor.

Objectives: To examine perspectives of caregivers of youth with SCD on gene therapy and clinical trial participation.

Methods: Participants completed an anonymous 19-item survey after seeing a presentation during a SCD Education Day. The presentation covered information about current treatments and gene therapy. Caregivers who elected to participate were asked to rate the likelihood of allowing their child participate in a gene therapy study (1="Not likely at all" to 5="Absolutely yes") and indicate risks and benefits that would influence participation. Caregivers rated reasons that would influence their choice to allow their child to be in a gene therapy study (0=No, 1=Maybe, 2=Yes) and if they would be interested in participating in a gene therapy focus group.

Results: Surveys were completed by 37 caregivers (62% mothers, 19% fathers, 11% legal guardians, 8% grandparents) of patients with SCD (*M*_{age}=9.79 years, *SD* = 5.23, range=2–19; 68% female; 100% African American). Caregivers rated likelihood of allowing their child to participate in a gene therapy study before the presentation (*M*=3.68) and after (*M*=3.68). Highest rated risk factors included: Death (*N*=26, 74%) and Cancer (*N*=20, 57%). Highest rated benefits included: Cured of SCD (*N*=32, 91%), Better quality of life (*N*=25, 71%). Factors rated to most influence study participation were: Child's current health (*N*=30, 91%, *M*=1.70, *SD*=0.64), Child's health after gene therapy (*N*=30, 91%, *M*=1.52, *SD*=0.67). Factors with the least influence were: Religious beliefs (*N*=3, 9%, *M*=0.09, *SD*=0.29), Family's opinion (*N*=15, 46%, *M*=0.64, *SD*=0.78). Finally, the majority of caregivers endorsed interest in participating in a gene therapy focus group (*N*=32, 94%).

Conclusions: Results indicate that caregivers are interested and willing to learn more about gene therapy as a treatment option for their child with SCD. Future directions should tailor information about gene therapy to disseminate to families that address questions and concerns regarding the treatment and clinical trial participation.

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D057

10:00 AM-11:00 AM

COMPARING MINIMUM DIETARY DIVERSITY OVER TIME IN BANGLADESH: AN EXAMINATION OF THE 2011 AND 2014 DEMOGRAPHIC AND HEALTH SURVEY

Sarah Blackstone, PhD, MPH

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Improving infant and young child feeding practices is critical for improving growth and reducing child mortality and morbidity. This paper aims to compare predictors of minimum dietary diversity, an important indicator of adequate complementary feeding practices, in Bangladesh in 2011 and 2014. The 2011 and 2014 Bangladesh Demographic and Health Survey were used to examine predictors of minimum dietary diversity among 6–23 months. An additional analysis was conducted for the 18–23-month group, because a significant increase in meeting minimum dietary diversity recommendations was seen in this age group only. Factors found to be associated with practices were compared across time points. In 2011, minimum dietary diversity was 23.8% and increased to 28.8% in 2014. Among children 18–23 months, in 2011 minimum dietary diversity was 32.5% and increased to 42.8% in 2014. Consistent predictors of minimum dietary diversity among 6–23 months were education, exposure to media via newspaper, and infant age. In the 18–23-month age group, significant predictors in 2011 were wealth and decision making. In 2014, significant predictors were education and exposure to media. Important predictors included education, exposure to media, and infant age in the overall 6–23-month analysis. Demographic trends in Bangladesh indicated a significant increase in education and exposure to media between 2011 and 2014. As these were significant for minimum dietary diversity in 2014 overall and specifically in the 18–23-month group, they might be important targets of future interventions, specifically utilizing media channels and tailoring special strategies for women with low education and limited exposure to media.

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D058

10:00 AM-11:00 AM

GENETIC AND ENVIRONMENTAL CONTRIBUTIONS TO ADOLESCENT TELOMERE LENGTH IN A LOW-INCOME, AFRICAN AMERICAN SAMPLE

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A recent meta-analysis documented a negative association between level of psychosocial stressors experienced during childhood and telomere length (Hanssen, Schutte, Malouff, & Epel, 2017). However, no study to date has assessed this association while also controlling for genetic contributions to telomere length, and few studies have examined the mechanisms by which psychosocial stressors affect shortened telomeres during childhood and adolescence. The present study addressed these gaps by examining the contribution of cumulative family risk to mean telomere length (mTL) in adolescents, after accounting for the contribution of biological mothers' mTL. Indicators of cardiometabolic risk were included in the model as potential explanatory variables. African American biological mother-adolescent dyads (*N* = 40) were recruited from low-income communities and participated in a home visit to complete study measures as well as overnight fasting, a blood draw, and analysis of cardiometabolic risk indicators. Adolescents (*M* age = 14.05 years, *SD* = 1.20; 57.5% female) completed measures of felt acceptance and a health screen; mothers (*M* age = 37.79 years, *SD* = 6.04) answered questions on demographics, family stressors, and health status. Trained staff took blood samples and measures of height, weight, waist circumference, and blood pressure in the home. A 5-item cumulative family risk measure was calculated from sociodemographic and psychosocial risk factors. Blood was analyzed for glucose, insulin, C-reactive protein, low-density lipoprotein, and high-density lipoprotein as well as mTL. Youth mTL was not associated with youth age or sex. Regression analysis predicting youth mTL in base pairs revealed a positive association with maternal mTL (standardized beta = .65, *p* < .001), a negative association with cumulative family risk (standardized beta = -.34, *p* < .05), and a marginal negative association with C-reactive protein (standardized beta = -.28, *p* < .10) but no other indicators of cardiometabolic risk. The overall model explained 42.4% of the variation in adolescent mTL. Overall it appears that in this sample of low-income minority youth, both genetic and environmental factors make independent contributions to adolescent mTL in expected directions. Because cytogenetic changes are potentially modifiable, interventions to decrease family risk or alter responses to risk may decrease chronic disease risk in the AA population.

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D059

10:00 AM-11:00 AM

MATERNAL KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS CHILD IMMUNIZATION: AN EXPLORATORY STUDY IN TAIWAN

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Previous studies have documented that parental health literacy, or caregivers' health literacy, have had a significant impact on child health outcomes. So far, only a limited amount of studies have investigated maternal childhood immunization literacy. This study was carried out among pregnant women attending the antenatal clinic in the Taipei City hospital. A qualitative approach was adopted. We conducted in-depth interviews with 15 pregnant women who are aged 20 years or older, and are able to read and speak Chinese. All information from the interviews has been saturated. We transcribed and reviewed the data, and then analyzed the data for thematic analysis. Our findings showed that most women were lacking in knowledge with regard to infant and child vaccines, as well as skills for managing the side-effects from vaccines, although they did show a positive attitude towards the importance of vaccines. In terms of interactive literacy, less than 50% of the women would discuss child vaccines with their partners, but only focusing on the time arrangement of taking their children for vaccinations. Most of them would search online for the information, especially the knowledge, but the sources were mainly from either a celebrity's Blog or by using keywords on Google, rather than from the government websites. Finally, women were less likely to consult health care professionals, instead, they searched for help from parents, friends, or information from websites. We suggested that future health education should use multi-component strategies to enhance the maternal child immunization literacy as well as to involve women's spouses in prenatal education.

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D060

10:00 AM-11:00 AM

PARENTING STYLES AND SUBSEQUENT EFFECTS ON CHILD INTERNALIZING BEHAVIORS: A STATISTICAL ANALYSIS

Tayler N. Turnquist, B.A.

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Throughout the media and the scientific community, there has been a long-standing question regarding what constitutes a good parent. Two prominent developmental psychologists, Diana Baumrind and Susie Lamborn, expanded their field by defining parental attributes and parenting styles. They conducted research on the significant influence parenting styles have on how children emotionally, behaviorally, and cognitively develop. Four specific parenting styles: Authoritative, Authoritarian, Permissive, and Neglectful were found to impact various aspects of childhood development and lifespan behaviors. The purpose of the current study was to determine the effect of the four parenting styles on internalizing behaviors in children. The study utilized data from the NICHD Study of Early Child Care and Youth Development (SECCYD) database, a longitudinal study spanning 17 years, beginning in 1991 and ending in 2007. With access to all four phases of the SECCYD, a latent growth curve and class analysis was used to examine change in child internalizing behaviors over time within the four parenting styles. Results of the latent growth analysis indicate a prominent change in individual internalizing behavior trajectories over time. Preliminary results of the latent class analysis support current research and the primary hypothesis of this study that clusters of internalizing behavior trajectories are attributed to a Permissive parenting style. The findings of this research will allow for possible interventions in order to establish more adaptive parenting techniques in order to combat potential maladaptive behaviors in children.

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D061

10:00 AM-11:00 AM

PARENTS IN THE BATTLE OF KIDS VS SODA

Michayla Stallings, HS, April Leshner, HS, Jack Burg, HS, Allison Kiefner-Burmeister, Ph.D.

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Regular intake of sugar sweetened beverages (SSB) increases the risk of childhood obesity and other serious health issues. Both parent and child factors are important influences on child health (Tipton, 2014; Fitzgerald, Heary, Nixon, Kelly, 2010). In the present study, parent and child motivation and barriers to decreasing SSB intake were examined. We predicted that even in autonomy seeking pre-teens, the association between child factors (motivations and perceived barriers) and child SSB intake would be mediated by the same parent factors.

Participants were 41 seventh grade students (68% White, mean age 13.3(46)) from Northwest Ohio and their parents. All participants reported eating behaviors, psychological factors with regard to eating, and more specifically, their motivations and barriers to personal SSB intake.

Examined via regression analyses, parents' perceived barriers fully mediated the association between child perceived barriers and child SSB intake. Parent barriers and child barriers were related to each other ($r = .65, p < .001$) and child SSB intake before mediation (parent barriers, $b = -.64, t(27) = -4.30, p < .001$; child barriers, $b = -.40, t(38) = -2.70, p = .01$). The inclusion of parent barriers as a mediator reduced the relationship between child barriers and SSB intake to non-significance ($b = .02, t(27) = .08, p = .94$).

Parents' motivations fully mediated the association between child motivations and child SSB intake. Both parent motivation and child motivation were related to each other ($r = .65, p < .001$) and SSB intake before mediation (parent motivation, $b = -.42, t(27) = -2.40, p = .02$; child motivation, $b = -.54, t(38) = -4.00, p < .001$). The inclusion of parent motivation as a mediator reduced the relationship between child motivation and SSB intake to non-significance ($b = -.22, t(27) = -1.06, p = .30$).

Additionally, Pearson's correlations were used to explore whether specific parental feeding practices were associated with parent and child motivations and perceived barriers to SSB intake (CFPQ; Musher-Eizenman & Holub, 2008). Parent-reported feeding for emotion regulation, child nutrition education, and healthy environment promotion were all related to child barriers and/or motivations to reduce SSB intake (all $ps < .05$). Findings suggest children's and parents' psychological factors are both influential on SSB consumption, but that parental feeding factors are still of greater importance in this pre-teen age group.

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D062

10:00 AM-11:00 AM

PREDICTORS OF EXCLUSIVE BREASTFEEDING IN BANGLADESH: AN EXAMINATION OF THE 2007, 2011, AND 2014 DEMOGRAPHIC AND HEALTH SURVEYS

Sarah BLackstone, PhD, MPH

James Madison University, Harrisonburg, VA

Background: Exclusively breastfeeding (EBF) up to 6 months can significantly reduce child morbidity and mortality. In Bangladesh, rates of EBF are sub-optimal. The objective of this study was to explore predictors of EBF using data from 2007, 2011, and 2014, specifically to see if notable predictors have changed over time.

Methods: Data on mother/infants pairs with infants below 6 months were examined at the three time points. The EBF prevalence, changes in EBF since the previous survey, and determinants of EBF at each time were examined using t-tests, chi-squared, and multi-level multiple logistic regression to account for regional clustering.

Results: Prevalence of EBF was 42.5%, 65%, and 59.4%, respectively. Age of the child was significantly associated with EBF across all time points. Additionally, regional variations were present, with lowest rates of EBF in Barisal and Dhaka. The largest changes in EBF occurred in the 3–5 month age group. Predictors of EBF in this specific age group were similar to overall predictors (e.g. age of the child and region). Participation of the mother in household decisions was a significant predictor in 2014.

Conclusion: EBF prevalence in Bangladesh increased between 2007 and 2011, and then decreased between 2011 and 2014. The increase in 2011 may have been a result of the wide-spread initiatives to promote EBF in that time frame. Due to the unexplained decrease in EBF between 2011 and 2014, there is still a need for interventions such as peer counseling, antenatal education, and community awareness to promote EBF.

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MERITORIOUS AWARD WINNER

D063

10:00 AM-11:00 AM

RISKY BEHAVIORS AND DEPRESSIVE SYMPTOMS IN CHRONICALLY ILL COLLEGE STUDENTS

Emma Roberts, Student, Julia Johnston, Student, Ali Brenman, Student, Anna Baker, PhD, Professor

Bucknell University, Lewisburg, PA

Background: Previous research has shown that having a chronic illness can serve as a protective factor against risk taking behaviors in adolescents. However, a growing body of literature suggests that chronically ill teens are engaging in these behaviors at equal, if not higher rates than their peers. This study explores whether depression mediates risk taking behavior in college students with and without chronic illness.

Methods: Data was collected using an online survey distributed to 565 undergraduate students (79% female, 72% Caucasian) with and without chronic illnesses. Of these students, 151 reported having a chronic illness and 414 were healthy. Students completed measures of depressive symptoms (PHQ-8) and risky behaviors as part of a larger study.

Results: Both groups in the sample reported moderate to severe levels of depression (healthy students $M = 16.00$, chronically ill students $M = 17.55$). Both groups in the sample reported rates of risk taking behavior comparable to those reported in previous research on college students. Researchers utilized regression analysis using Hayes' PROCESS analysis. There was no significant difference in risk taking behaviors. However, results indicated that the presence of chronic illness was a significant predictor of depressive symptoms $b = 1.74$, $SE = .62$, $p < .01$, and that depressive symptoms were a significant predictor of risky behaviors, $b = .1903$, $SE = .03$, $p < .001$. A bias-corrected bootstrap confidence interval for the indirect effect based on 5,000 bootstrap samples was entirely above zero (.1173, .6409). These results support the mediational hypothesis of a significant indirect effect of depressive symptoms on risk taking behavior. Data collection is ongoing to attain a larger sample of students with chronic illness.

Discussion: The data suggests that college students engage in equal amounts of risky behavior, regardless of illness status. The data showed high levels of depressive symptoms in both groups, though chronically ill college students had more depressive symptoms than their peers. Students with depression may be more likely to engage in risky behaviors. These findings demonstrate a need for increased mental screening and intervention for college students, particularly if they have a chronic illness. In addition, these risk-taking behaviors might negatively impact their treatment regimens and overall health outcomes.

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D064

10:00 AM-11:00 AM

RURAL CAREGIVER SUPPORT AND ENGAGEMENT WITH CHILD HEALTH BEHAVIORS IN THE HOME ENVIRONMENT: A QUALITATIVE STUDY

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Background: Obesity rates are disproportionately high among rural and Native American (NA) children. Health behaviors which contribute to child obesity are influenced by the obesogenic environment, including the considerable influence exerted by caregivers at home. Although current childhood obesity prevention programs recognize the importance of incorporating the caregiver as a central aspect of child behavior change, effectively engaging caregivers remains a crucial challenge, particularly among low-income and ethnic minority families. The purpose of this study was to learn how rural caregivers support and engage with their children's nutrition and physical activity (PA) behaviors at home.

Methods: Community-based methods were used to recruit 25 NA and non-NA caregivers with children living on a rural American Indian reservation to participate in focus groups or semi-structured interviews. Questions were designed to explore caregivers' habits, challenges, and opportunities for (1) supporting for their children's healthy eating and PA behaviors at home; and (2) engaging with their children in these behaviors. Questions were developed by community members and researchers trained in qualitative research methods. Duplicate content analysis, guided by a grounded theory approach, was performed to identify themes and develop a coding frame.

Results/Discussion: Over half of caregivers identified as NA, and over 60% reported being the main decision-maker in the household regarding food and PA. Caregivers identified themes around family strengths, barriers, and opportunities for improvement. Family strengths included behaviors reflecting a "whole family approach" for support and engagement, including role modeling, participation of all children in the family, and multi-cultural, multigenerational learning. Barriers included lack of resources, concern for child safety, and competing family priorities. Strategies for improvement included organized opportunities for caregiver-to-caregiver learning and support in the form of resources and education for promotion of healthy activities in the home.

Conclusion: Themes identified reflect distinct social and cultural strengths and challenges for NA and non-NA families living in rural areas. Results from this study may inform childhood obesity prevention programs seeking to effectively engage non-NA and NA rural caregivers in home-based child behavior change efforts.

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D065

10:00 AM-11:00 AM

TAKING STOCK OF DIETARY SUPPLEMENTS' HARMFUL EFFECTS ON GIRLS AND WOMEN: ANALYSIS OF 11 YEARS OF ADVERSE EVENTS

Flora Or, Doctor of Science¹, Yongjoo Kim, Sc.D., M.P.H., K.M.D., Ph.D.¹, Juliana Simms, Staff Assistant & HAA Receptionist², Bryn Austin, Professor¹¹Harvard T.H. Chan School of Public Health, Boston, MA; ²Harvard University, Cambridge, MA

Many dietary supplements target marketed especially to women have been found to be tainted with toxic ingredients. We examined the gender and age differences in adverse events reported to the U.S. Food and Drug Administration (FDA) involving dietary supplements consumed by children and young adults (ages 0–25 years) from January 2004 through April 2015. Based on brand names in the FDA database, we used descriptions on company websites, Amazon.com, or articles identified via Google search to categorize supplements in seven groupings: weight loss, colon cleanse, diuretic, muscle building, sexual function, vitamin, or other. We conducted multivariable logistic regression analyses cross-sectionally using gender and age as predictors and the respective supplement category as binary outcomes. Over the 136-month observation period, there were 2535 adverse events due to dietary supplements, 119 of which led to death. Approximately half of these adverse events affected girls and women aged 25 years or younger. Based on the reported adverse events (i.e., unique clinical symptom per person per report), the risks for adverse events and deaths associated with a supplement category varied by gender and age group. Within each age group, females were twice as likely to experience an adverse event related to dietary supplements sold for weight loss or vitamins ($p < 0.001$) and ten times as likely to experience an adverse event related to as supplements sold as diuretics ($p < 0.05$) as compared to males; whereas, males were more likely to experience an adverse event from dietary supplements sold for muscle building ($OR = 6.7$, $p < 0.001$) or sexual function ($OR = 4.3$, $p < 0.001$) than were females. Compared to females younger than 12 years old, 12–17-year-old females had lower risks for adverse events due to vitamins ($OR = 0.4$, $p < 0.001$) or the "other" supplement category ($OR = 0.7$, $p < 0.001$); however, 12–17 year-old females had higher risks for adverse events due to dietary supplements sold for weight loss ($OR = 2.9$, $p < 0.001$), colon cleanse ($OR = 2.5$, $p < 0.001$), diuretics ($OR = 3.2$, $p = 0.055$), muscle building ($OR = 2.3$, $p < 0.001$), and sexual function ($OR = 7.3$, $p < 0.05$). Given the heightened dangers as well as large gender and age disparities in adverse events due to dietary supplements, public health scrutiny of youth access, gendered-marketing, and sales of these products is warranted.

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D066

10:00 AM-11:00 AM

THE FRAGILE X BRAIN: A PET/MR CASE STUDY

Soujanya Gade, California¹, Soujanya Gade, BS², Bin Shen, California³, Jae Ho Jung, Ph.D.⁴, Byung Chul Lee, Ph.D.⁴, Sang Eun Kim, MD, PhD⁵, Lawrence Fung, California¹, Frederick Chin, California⁶

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Objective: Detail one of the first case reports of a 28-year-old adult male with a diagnosis of fragile X syndrome (FXS) utilizing Stanford's state-of-the-art hybrid PET/MR system.

Introduction/Background: Fragile X syndrome (FXS) is the result of a mutation on the FMR1 gene and is the leading heritable cause of cognitive disability that affects approximately 1 in 5000 individuals. Common behavioral characteristics of FXS include autistic-like features such as social anxiety, poor eye-contact and sensory issues. The cognitive phenotype identified in individuals with FXS can include learning disability, reduction in verbal skills, and deficits in visuo-spatial reasoning.

Methods: A comprehensive neuropsychology battery of assessments for cognitive function (Stanford-Binet Intelligent Scales), adaptive skills (Vineland-II) and autism spectrum symptoms (ADOS-2) were completed. Clinical-grade [¹⁸F] flumazenil was synthesized at Stanford. Following intravenous injection of [¹⁸F] flumazenil participant was scanned on a 3T time-of-flight (TOF) GE PET/MR system (Signa, GE Healthcare, Waukesha, WI). Dynamic PET images were analyzed using PMOD (PMOD v2.9, PMOD Inc, Zurich) and FSL was utilized to calculate fractional anisotropy (FA) from diffusion tensor images (DTI).

Results: Time activity curves were generated for 10 subcortical regions are shown in Figure 1. Fractional anisotropy (FA) values were observed in the hippocampus (0.42 ± 0.20) caudate (0.28 ± 0.22) and thalamus (0.29 ± 0.16). Representative 1H-MRS data on the GABA editing are shown in Figure 2.

Discussion/Conclusion: The current study encompasses a global report across multiple domains ranging from neurodevelopment to cognitive and behavioral measures. PET/MR data was used to report initial analyses for the first participant in this study. Future analyses will report group differences with a larger sample that includes age and IQ matched adults with idiopathic developmental delays as a comparison group.

Implications: Elucidating the underlying neurobiological differences in FXS be a critical step in developing targeted treatment that is currently unavailable due to the lack of knowledge about the emergence of the behavioral phenotype and their underlying neural substrates.

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D067

10:00 AM-11:00 AM

DIMENSIONS OF LIFESTYLE HEALTH-RELATED SELF-CONCEPT ASSOCIATED WITH WEIGHT IN A TYPE 2 DIABETES PREVENTION INTERVENTION

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Behavior change and its maintenance is a complex process that is affected by context, behavior, setting, and mechanisms of change. Examination of psychosocial factors may provide insights into lifestyle intervention participation and, subsequently, desired health outcomes (i.e., weight loss, healthy eating, increased physical activity) as well as the maintenance of lifestyle change. Health-related self-concept (HRSC) indicates both positive (i.e., promote well-being) and negative (i.e., decrease adaptive health behavior) factors associated with health. The Lifestyle-HRSC assesses HRSC in the context of lifestyle change. The purpose of this study was to examine of how Lifestyle-HRSC is associated with desired outcomes of a T2DM prevention intervention. The Lifestyle-HRSC scale (79-items) was implemented at pre and post intervention within a type 2 diabetes prevention program. Dimensions of the Lifestyle-HRSC include nutrition, social support, avoiding diabetes, physical activity, problem solving, and challenges related to being healthy. Data were obtained from 69 participants; 47 who completed pre/post intervention assessment and 22 who did not complete post intervention assessment. Simple linear regressions were calculated to predict Lifestyle-HRSC dimensions based on weight and significant relationships were found. For individuals who completed pre/post intervention assessment: at pre intervention, higher weight indicated high agreement with risk-reducing nutrition scores ($F(1, 46) = 4.36, p = 0.04, R^2 = 0.09$). For individuals who did not complete post intervention assessment: at pre intervention, higher weight indicated low agreement with risk-reducing social support scores ($F(1, 21) = 6.39, p = 0.02, R^2 = 0.23$) and low agreement with risk-reducing physical activity scores ($F(1, 21) = 4.98, p = 0.04, R^2 = 0.19$). Pre intervention weight and post intervention weight did not predict any post intervention Lifestyle-HRSC dimension. Chronic disease prevention is an important public health concern and requires innovative approaches to prevention intervention delivery. Lifestyle-HRSC could enhance our understanding of adherence to and engagement in diabetes prevention programs. In addition, this scale may provide an innovative screening to distinguish among individuals who are or are not likely to follow-through with a prevention intervention.

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D068

10:00 AM-11:00 AM

EXAMINING UNMET BASIC NEEDS AND HEALTH STATUS AMONG MEDICAID BENEFICIARIES WITH TYPE 2 DIABETES

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Patients with type 2 diabetes with unmet basic needs (e.g., housing, utilities, transportation) have greater barriers to effective disease self-management. Unmet basic needs impede health behaviors that prevent negative health outcomes and costly healthcare utilization. Most research on unmet needs, however, has focused on single problems (i.e., food insecurity) and distal health-related outcomes (i.e., HbA1C).

To inform the final design of a future intervention to assess and address unmet basic needs, we conducted a pilot study to describe the unmet basic needs and healthcare gaps in adult Medicaid beneficiaries in Louisiana with type 2 diabetes, as well as participants' interest in patient navigation programs. Descriptive statistics and bivariate associations are reported.

Participants completed a cross-sectional survey by phone (n=95) or online (n=14). The sample was 67% female; mean age=50 (SD=10); 51% African American, 39% white. Education varied: 28% had less than high school, 37% high school, and 31% had additional training or degrees. Few worked for pay (20%) and 48% were disabled; 55% reported a household income <\$10,000. Participants reported unmet needs (M=3.2, SD=2.6) including difficulty paying for unexpected expenses (68%), necessities (31%), medical costs (24%), and utilities (23%). Other needs were for adequate food (18%), housing (7%), neighborhood safety (20%), reliable transportation (17%), phone and internet access (10% each), and personal safety (4%). Most had a regular doctor (90%) with M=9 (SD=17) visits in the past year, 51% had an ER visit, and 43% were hospitalized at least once. Participants reported M=9 (SD=11) physical and mental "unhealthy days" and days with activity limitations; M=12 (SD=12) days with poor sleep; and 70% reported fair/poor health. Participants reported their last A1C: <7.0 (25%), 7.1–8.0 (11%), ≥8.1 (25%) and don't know (36%).

Having greater unmet needs was associated (p<.001) with less frequent diabetes self-care activities (r=-.30), worse self-reported health (r=-.28), greater perceived stress (r=.41), diabetes distress (r=.35), attention (r=.29), cognitive functioning problems (r=.27), activity limitations (r=.34), hospitalizations (r=.29), and wanting a basic needs navigator (OR=1.52). Unmet needs were associated with worse mental health days (r=.32) and sleep (r=.30), but were not associated with poor physical health days, self-reported A1C, BMI, smoking status, doctor or ER visits.

Our findings support calls for systematic screening and navigation programs to be integrated within healthcare systems for patients with unmet basic needs. Our findings suggest that helping Medicaid beneficiaries meet these needs may lead to improvements in multiple health-related outcomes including reduced stress, better self-reported health and health behaviors, and fewer hospitalizations.

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D069

10:00 AM-11:00 AM

LIVING WITH TYPE 2 DIABETES: A SOCIAL COGNITIVE PERSPECTIVE ON ADHERENCE

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Adherence to a medical regimen is a multifaceted concept. Given the complexity of the diabetes self-care regimen, it is not surprising that individuals with type 2 diabetes have difficulty adhering to self-care behaviors, including physical activity, dietary choices, blood glucose monitoring, and medication usage. Social cognitive theory (SCT) has been used as a framework for examining psychosocial factors associated with health behavior change and is a valuable tool for understanding adherence. Two basic cognitions underlie this theory: outcome expectations (OE) and self-efficacy cognitions (SE). Although SE has received the most attention in the literature, it is important to assess both constructs to more fully understand adherence in adults with type 2 diabetes. 'Living with Diabetes' (LWD) was a multi-methodological study designed to provide a deeper understanding of the factors influencing adherence to diabetes self-care behaviors. Study participants (n=108) averaged 56.6 years of age (SD=10.3), were majority female (58%), and included African Americans (48%) and Whites (52%). After measurement with validated instruments, ordinary least squares regression was used to assess the relationship between the outcomes of self-care health behaviors (diet, exercise, blood glucose monitoring, and medication adherence), and the independent variables of SE and OE while controlling for demographic variables (age, sex, race) and A1c levels in all models. In multivariable models including all the above predictors, SE was significantly and positively associated with both diet (p<.0001) and physical activity (p<.001). Both OE for testing blood glucose and SE were significantly associated with self-reported monitoring (p=.001 for both). Neither OE nor SE was significantly associated with medication usage. All associations were in the expected direction (i.e., higher OE and SE associated with more favorable outcomes). Discussion of the relations between adherence, SE and OE will incorporate motivational data derived from in-depth laddering interviews in the LWD study – a technique that provides insights into the patients' key values, and the behavioral strategies they use to attain these values. By better identifying the relationship between strategies and values, we hope to more fully understand why adults with type 2 diabetes vary in their ability to maintain optimal adherence and promote their health and well-being.

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D071

10:00 AM-11:00 AM

RACIAL DIFFERENCES IN DIABETES DIAGNOSIS AMONG WOMEN WITH HIGH STRESS: FINDINGS FROM THE SOUTH CAROLINA WOMEN'S SURVEY

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Background: Racial and ethnic minorities are disproportionately burdened by type 2 diabetes, and these disparities may be more prevalent in the southeastern U.S. There is evidence that stress may be associated with diabetes risk, yet few studies have examined racial differences in the association between chronic stress and diabetes. The purpose of this study was to examine relationships among chronic stress, diabetes, and race in South Carolina women.

Methods: Data came from the South Carolina Women's Survey, an ongoing study of racially, socioeconomically, and geographically diverse women intended to examine society-to-cell influences on aging among women in South Carolina. A subsample of African-American and White women enrolled in the study (N=290) were included in analyses. Chronic and perceived stress was measured using a 19-item scale (Cronbach's alpha=.84), and responses were categorized into tertiles. Diabetes diagnosis was based on participants self-reporting that a health professional had told them they had diabetes, and that diagnosis was not during pregnancy. Data were analyzed using multiple logistic regression, controlling for age, income, and education.

Results: Participants were racially-diverse (65.2% White, 34.8% African-American) and ranged in age from 18 to 93 years (mean age=56.6). African-American women were significantly ($p<0.01$) more likely to be in the top stress tertile compared to White women (41.6% compared to 31.4%). Overall, 23.1% of the participants reported being diagnosed with non-gestational diabetes. African-Americans were significantly ($p=0.04$) more likely to have been diagnosed with diabetes (30.0%) than Whites (19.4%). After adjusting for sociodemographic characteristics, higher stress was associated with a positive diabetes diagnosis among all women (OR=2.35, $p=0.01$). Race moderated the association between chronic stress and diabetes such that in the highest stress tertile, African-American compared to White women were less likely to be diagnosed with diabetes (OR=0.25, $p=0.03$).

Conclusions: Overall, African-American women had higher stress levels and were more likely to have diabetes than their White counterparts. Higher stress was associated with diabetes among all women, but African-Americans with high stress were less likely to have diabetes than Whites. Future research might examine factors that may help to explain racial and ethnic differences in the impact of high stress on women's risk of diabetes.

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D072

10:00 AM-11:00 AM

A DIABETES SELF MANAGEMENT E-HEALTH BEHAVIORAL INTERVENTION: CERTIFIED DIABETES EDUCATORS PERCEPTIONS AND RATINGS

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PURPOSE: Thirty million people in the United States have diabetes according to 2017 diabetes statistics. As a consequence of its prevalence, Healthy People 2020 has as part of its national objective the goal of increasing the proportion of persons with diagnosed diabetes who receive formal diabetes education. Certified diabetes educators (CDE) are at the forefront of the delivery of diabetes self management education (DSME). However, there are only 20,000 CDEs nationally. To address this disparity between diabetes prevalence and the number of CDE nationally, this study evaluated certified diabetes educators (CDE), representative of diverse health professions, perceptions of an e-health intervention that utilized avatar-based technology. This study investigated the potential an e-health intervention, that is framed within a logic model and grounded in health behavioral theories, has in increasing access and thus reducing disparity to diabetes self-management education (DSME).

HYPOTHESIS: After watching the video covering the seven diabetes self-management behaviors, CDE® will rate the quality of the avatar video as high.

METHODS: Cross-sectional, survey-based design utilizing quantitative and qualitative paradigms. N = 198 CDE® participated in the evaluation. Participants were mostly female and represented an age range of 26–76 years. The profession representative of the sample was registered nurses.

ANALYSIS: *t*-tests, Pearson product moment correlations, backward stepwise regression, content/thematic analysis.

RESULTS: Age, ethnicity, Arab/Middle Eastern, Asian, and White/European descents were significant predictors of a high-quality rating of the video. Thematic and content analysis of the data revealed an overall positive perception of the video.

CONCLUSIONS: An e-health intervention grounded in evidenced-based health behavior theories has potential to increase access to DSME as evidenced in the ratings and perceptions of the video by CDE®.

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D073

10:00 AM-11:00 AM

BEHAVIORAL DIABETES PREVENTION IN AFRICAN AMERICAN AND HISPANIC US WOMEN: REVIEW AND GENDER ANALYSIS

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Objectives: Behavioral, or lifestyle, interventions have been indicated as the successful gold standard approach for the prevention of diabetes in large-scale studies. Translational studies have attempted to adapt interventions such as the Diabetes Prevention Program for use in community settings. African American and Hispanic women in the US face disproportionate risk of developing diabetes, however, few translational studies have focused specifically on these groups. The objective of the current study is to systematically review such studies, and to assess gender as an influential component of prevention programming.

Method: A systematic literature review was conducted to identify randomized controlled trial or quasi-experimental intervention studies in the US with African American or Hispanic women with prediabetes or who are at-risk for developing diabetes. Studies were identified via the following databases from inception to June 2017: Academic Search Premier, Ageline, CINAHL, Global Health, Health Source, and Medline. A gender analysis was conducted using a novel feminist appraisal tool.

Results: Among the eight studies identified, five yielded statistically significant weight loss. One study indicated significant reduction of blood glucose. Five studies described intervention adaptations that were specific to women participants, and five studies consulted women in development of the intervention. No studies provided a definition or measure of gender, and only three made recommendations based on women's experiences.

Conclusion: Behavioral diabetes prevention with African American and Hispanic women is promising. Although these studies focus exclusively on women, the influence of gender on health disparity is not thoroughly considered. Keywords: diabetes prevention, African American, Hispanic, feminist

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D074

10:00 AM-11:00 AM

COMPREHENSIVE COGNITIVE TRAINING: A FEASIBILITY STUDY FOR PERSONS WITH TYPE 2 DIABETES

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Background: People with type 2 diabetes (T2DM) are at risk for cognitive decline, with about 50% of older adults with T2DM becoming cognitively impaired. If the ability to use effective T2DM self-management activities is diminished by changes in cognitive function, then addressing the individual aspects of self-management (e.g. exercise and diet) may be less effective. Previous studies have attempted to assess the interactions of the psychological, physiological, and environmental factors that impact self-management, but few have addressed these factors as they relate to cognitive function.

Objective: The primary objective of this feasibility study was to determine whether a comprehensive cognitive function intervention implemented in a sample with T2DM would be useful in improving diabetes self-management.

Methods: Participants (n=19) enrolled in an 8-week intervention. The biweekly educational classes included: (1) information on T2DM self-management; (2) assessment of cognitive problems; (3) lifestyle changes to improve cognitive health; and (4) strategies to maximize cognitive function. Each participant was asked to use an online cognitive training program at home for a minimum of 45 minutes 3 times a week. Self-report measures of cognitive functioning (Multifactorial Memory Questionnaire; Barkley Deficits in Executive Function) and T2DM self management (Summary of Diabetes Self-Care Activities) were administered pre- and post-intervention.

Results: Executive function, but not memory, was significantly correlated with diet, exercise, and foot care (general diet $r = -.665, p < .01$; exercise $r = -.725, p < .01$; foot care $r = -.516, p < .05$). Post-intervention scores in all areas improved, but only diet, memory ability, and executive function improved significantly (diet $t(18) = -2.41, p < .05$; $t(18) = 5.54, p < .01$; executive function $t(18) = 3.11, p < .01$). All participants agreed that the intervention helped them improve their cognitive abilities and the computer activities kept their interest. All stated they would recommend the program to others.

Conclusions: To date there have been no other published studies using comprehensive cognitive training as an intervention in T2DM. While these results generally suggest that people with T2DM can improve their cognitive functioning after exposure to a cognitive training intervention, a randomized clinical trial using performance measures of cognitive function is needed to determine that changes observed here can be attributed to the program.

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D075

10:00 AM-11:00 AM

DEVELOPMENT OF A MODIFIED VERSION OF THE DIABETES FATALISM SCALE FOR USE IN ADULTS WITHOUT TYPE 2 DIABETES

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Fatalistic health beliefs have been linked with behaviors and outcomes in numerous domains including cancer screening, condom use, medication adherence, and blood sugar control, among others. The Diabetes Fatalism Scale (DFS; Egede & Ellis, 2010) was developed to assess diabetes fatalism, conceptualized as a multidimensional construct consisting of diabetes-related emotional distress (Despair), religious and spiritual coping (Hopelessness), and perceived self-efficacy (Powerlessness) in patients with Type 2 Diabetes. The current study aimed to adapt the DFS for use among non-clinical respondents for research on Type 2 Diabetes risk. Minor wording modifications were made to 10 of the 12 items (e.g., the word “my” removed from: “I believe God can completely cure my diabetes”). An ethnically diverse sample ($N = 345$) of adults aged 18 to 53 years without a prior diagnosis of diabetes filled out the modified scale and convergent validity measures. Confirmatory factor analysis was used to test a series of plausible models based on theoretical and empirical considerations. The 3-factor oblique model containing 11 items provided the best fit to the data ($S-B \chi^2 [41] = 95.09$, $CFI = .949$, $RMSEA = .062$, $SRMR = .049$). Factor loadings for each factor were good (Despair [4 items]: .46 - .89; Hopelessness [4 items] = .54 - .89; Powerlessness [3 items] = .59 - .75) and there was a significant interfactor correlation between Despair and Hopelessness ($r = .15$, $p = .022$). Internal consistency reliability was adequate for the subscales ($\alpha_s = .69 - .85$). Convergent validity analyses suggested that the subscales correlated in the expected directions with measures of mastery, general self-efficacy, stress, mental health, and health-related quality of life but were not significantly associated with self-reported diet or physical activity. These preliminary findings suggest that the modified DFS (DFS-Community) demonstrated good factorial validity and adequate convergent validity when conceptualized as 3 separate subscales assessing different facets of diabetes fatalism in respondents without diabetes. The measure is tentatively recommended for use, but potential relationships with intention to perform health behaviors should be evaluated in future research.

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CITATION AWARD WINNER

D076

10:00 AM-11:00 AM

EFFICACY OF A POSITIVE PSYCHOLOGY INTERVENTION FOR TEENS WITH TYPE 1 DIABETES: CHECK IT 2.0

Morgan Lyttle, BA¹, Sarah S. Jaser, PhD², Emily R. Hamburger, MEd², Rodayne Williams, BA², Leena Choi, B.S., M.S., Ph.D.³, Samuel Nwosu, B.S. and M.S.⁴

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Background: Teens with T1D are at high risk for poor glycemic control, increasing their risk of developing long-term health complications. Because the burden of treatment for T1D falls largely on the patient and family, interventions aimed at increasing adherence to treatment regimens are needed. Positive psychology interventions that aim to increase positive affect have been demonstrated to improve treatment compliance in adult populations. The current study aims to examine feasibility and preliminary efficacy of the latest iteration in a series of pilot studies, a text message delivered positive psychology intervention (Check It 2.0).

Methods: Participants ($n = 48$, age 13–17 years, 50% female, mean $A1c = 8.8\%$) were randomized to an Education (Edu) group or a Positive Affect (PA) group. Participants in the Edu group received educational materials on type 1 diabetes management. Those in the PA group also received a text-message based intervention that incorporated empirically-validated exercises to induce positive affect through self-affirmation, gratitude, parental affirmation, and small gifts. Average daily blood glucose monitoring (BGM) was obtained through 30 day glucometer downloads. $A1c$ was obtained from medical charts and adherence was measured using the Self-Care Inventory (SCI) and Parent Self-Care Inventory (PSCI). Diabetes-related family conflict was measured using the Revised Diabetes Family Conflict Scale (DFC).

Results: Teens' response to PA text messages was high, with an average response rate of 75.7% during the intervention, indicating the feasibility of the protocol. Due to the small sample size of this study, the statistical analyses performed did not reach significance. However, small to moderate effects were observed on several clinically relevant measures. In terms of adherence, parent-reported adherence (PSCI, $d=0.214$) and frequency of BGM ($d=0.386$) increased in the PA group compared to the Edu group. Diabetes-related conflict (as reported by teens) decreased in the PA group ($d=-0.467$). An overall improvement in glycemic control was observed in the PA group compared to the Edu group ($d=-0.283$). Interestingly, the decrease in $A1c$ was most noticeable in those within the middle tertile ($8.03 < x < 9.23\%$) of baseline $A1c$ ($d=-0.344$).

Discussion: In our sample, notable improvements to adherence, glycemic control and diabetes-related conflict indicate that positive affect interventions could be a promising avenue for improving chronic disease management in teens with T1D. Furthermore, the feasibility of a text-message based intervention was validated by high teen rates of engagement. The decrease in $A1c$ indicates that a text-message based PA intervention has promising effects for glycemic control, especially for those with baseline $A1c$ between 8–10%.

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D077

10:00 AM-11:00 AM

ENGAGING STAKEHOLDERS IN INTERVENTION DEVELOPMENT: THE D1 NOW STUDY TO PROMOTE SELF-MANAGEMENT IN YOUNG ADULTS WITH DIABETES

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Background: Young adults with Type 1 Diabetes are at high risk of poor diabetes self-management and poor clinical outcomes. In this research, our aim was to develop an intervention to engage young adults in diabetes health services and improve diabetes-related outcomes. As part of intervention development, we aimed to (1) engage key stakeholders and (2) explore perceptions of barriers and facilitators to self-management among young adults with Type 1 Diabetes (T1D) using the COM-B (Capability, Opportunity, Motivation - Behaviour) Model of understanding behaviour.

Methods: A Young Adult Panel (8 diabetes service-users aged between 18–25 years living with T1D) was formed, which guided the research process and informed the development of interview topic guides to explore barriers and facilitators to self-management. Interviews were conducted with parents of young adults with T1D (n=10) and health service providers (n=15), and focus groups (n=3) were conducted with young adults, at 3 sites in Ireland (Galway, Belfast and Dublin). Thematic analysis was used to analyse the data using the framework of the COM-B model to identify and categorise the determinants of T1D self-management among young adults.

Findings: Diabetes education and regular, informal access to diabetes-related information was considered vital to capability to engage in diabetes self-management. However, self-management behaviour appeared to be determined by external physical and social factors such as access to a supportive diabetes team. External factors may directly drive self-management behaviour, for example through a stable daily routine, or influence motivation, for example through beliefs about capability to engage in self-management. Resources such as diabetes devices and peer networks enhanced self-management. Young adult's identity as a person living with T1D was an important determinant of self-management behaviour.

Discussion: Interventions should target environmental factors to positively influence capability and motivation to engage in T1D self-management among young adults.

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D078

10:00 AM-11:00 AM

HUMAN FACTORS DURING TRIAL OF A HYBRID CLOSED LOOP SYSTEM FOR TYPE 1 DIABETES MANAGEMENT

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Background: Hybrid closed loop (HCL) systems are designed to automate insulin delivery to improve type 1 diabetes (T1D) outcomes and reduce user burden and distress. The Medtronic MiniMed 670G, the first FDA approved HCL system, became available to consumers in early 2017. The system consists of continuous glucose monitoring (CGM), an insulin pump, and an algorithm to integrate them; thus, use of the system requires ongoing acceptance and use of both CGM and the insulin pump. In the current study, we explored the role of human factors in HCL system use. Specifically, we examined whether attitudes towards diabetes technology and management distress would: (1) change after using the system, and (2) predict system performance during the trial. We hypothesized that technology attitudes would become more positive, whereas management distress would decrease after trial on the HCL system. We also hypothesized that more positive pre-trial technology attitudes and less pre-trial management distress would be associated with better system performance (i.e., greater percent time within target glucose range), controlling for percent time in target range during the days prior to the HCL system trial.

Method: 14 adults and 15 adolescents with T1D (mean age=22.8 years, age range 15–38, 86% female, mean HbA1c %=8.0, mean diabetes duration=13.6 years) participated in a multisite clinical trial of a research version of the Medtronic 670G HCL system over 4–5 days in a semi-supervised outpatient setting. Users completed questionnaires assessing diabetes management burden and diabetes technology attitudes prior to beginning the HCL system and at the conclusion of the study. We conducted t-tests and general linear model analyses to test hypotheses.

Results: As expected, users' management distress decreased ($t(27)=2.7, p=0.01$) and their diabetes technology attitudes became more positive ($t(27)=-3.9, p=0.001$). Neither pre-trial technology attitudes or management distress were significant predictors of system performance; however, there was a trend towards greater pre-trial management distress predicting poorer system performance both during the day ($b=-0.35, p=0.11$) and night ($b=-0.41, p=0.05$).

Conclusions: Results suggest that HCL system technology is promising for enhancing diabetes technology attitudes and reducing management distress. Human factors, such as management distress, may negatively impact system performance and should be investigated in studies with larger samples.

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D079

10:00 AM-11:00 AM

IMPROVEMENT AND MAINTENANCE OF HEALTHY BLOOD GLUCOSE LEVELS IN PEOPLE WITH TYPE 1 DIABETES PAYING FOR ONE DROP | EXPERT COACHING

Lindsay Sears, PhD¹, Jeff Dachis, MA², Mark Heyman, PhD, CDE², Rachel Head, RD, CDE¹, Brian Huddleston, JD², David Rodbard, MD³, Chandra Osborn, PhD, MPH¹

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Objective: Over 1,500 mobile applications ‘apps’ assist with the management of diabetes, but only three of these apps offer live, in-app coaching support, and only two of these apps have been scientifically evaluated. One of these studies included people with type 1 diabetes (T1D), but did not report T1D-specific outcomes.

With the free One Drop | Mobile app on iOS or Android, people can log and track self-care/health data, get data-driven insights, set goals and monitor progress, and more. A paid subscription to One Drop | Experts offers in-app support and coaching from a Certified Diabetes Educator (CDE) a Bluetooth-connected meter and test strips. An independent company tested ‘Mobile’ with ‘Experts’ at no cost to users, and found people with type 2 diabetes and an A1c $\geq 7.5\%$ had a -90% lab A1c improvement at 3 months. There remains a need to evaluate the health outcomes of people with T1D and a real-time coach in an app.

Method: We queried One Drop’s database for people with T1D paying for an ‘Expert’ for at least 3 months. Among people with an average blood glucose (BG) ≥ 169 mg/dL (estimated A1c $\geq 7.5\%$) at start, three mixed repeated measures models assessed 1st- to 12th-week change in average BG, percentage of high BGs, and percentage of in-range BGs by coaching program (‘On Call’ vs. ‘On Track’). Unadjusted and adjusted logistic regression models tested the likelihood of a 12th-week average BG < 155 mg/dL (eA1c $\leq 7\%$) if 1st week average BG was < 155 mg/dL (eA1c $\leq 7\%$).

Result: The sample (N=196) was 53% male and diagnosed with T1D for 16.8 ± 12.6 years. People (n=98) with a 1st week average BG ≥ 169 mg/dL (eA1c $\geq 7.5\%$) had a -22.2 mg/dL lower average BG in week 12, $p < .001$, equivalent to -0.8% lower A1c. Average percentage of high BGs was -18.5% lower, and in-range BGs $+18\%$ higher, $p < .001$. There was no interaction by coaching program. People with a 1st week average BG < 155 mg/dL (eA1c $\leq 7\%$) had a higher likelihood (1.6 OR/1.7 AOR) of staying at BG < 155 mg/dL (eA1c $\leq 7\%$) in week 12.

Conclusion: Among people with T1D paying for a One Drop | Expert, average BG measured objectively improved among people with a high average BG at start, and a healthy level of BG was maintained among people with a low average BG at start. People paying for an in-app coach and meter with strips may be more motivated than someone not paying for these services. More studies should evaluate the impact of apps with coaching, especially within people with T1D.

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D080

10:00 AM-11:00 AM

MEASURING RISK PERCEPTIONS FOR DEVELOPING DIABETES IN A SAFETY-NET CLINIC POPULATION OF ENGLISH AND SPANISH SPEAKERS

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Background: Individuals’ perceptions of illness risk are an important determinant of and motivator for changing health behaviors. The Risk Perception Survey – Developing Diabetes (RPS-DD) is a validated instrument measuring risk perceptions, worry, and perceived control of developing diabetes. However, its psychometric properties have not been evaluated in low education, high-risk populations attending safety-net clinics. Although one study has examined psychometrics of a Spanish version, multiple items for external locus of control were removed, leaving the scale’s psychometric structure an open question. This study examined whether the psychometric structure of the RPS-DD is similar across males and females and for English and Spanish speakers in this low education population at high risk for diabetes.

Methods: Adult patients in a safety-net health system participating in a diabetes screening study (N = 658) answered interviewer-administered diabetes risk items assessing internal locus of control (2 items), external locus of control (2 items), comparative risk (2 items), and worry (2 items) over the telephone in their preferred language (English: 42%, Spanish: 58%). All participants completed the RPS-DD prior to completing diabetes screening tests. We performed exploratory and confirmatory factor analyses using a randomly generated split sample to determine the subscales’ structure.

Results: Exploratory factor analyses suggested a four-factor solution, and confirmatory factor analyses supported it (RMSEA = 0.094, 95% CI: .069, .121, CFI = .903). The 2-group factorial invariance analyses indicated that the 4-factor structure did not vary between males and females ($p = .13$). However, the structure did vary between English and Spanish speakers ($\chi^2(8) = 40.59$, $p < .001$). Specifically, the item ‘I feel I have little control over risks to my health’ loaded more strongly for English speakers.

Conclusions: The structure of the perceived control subscale in the RPS-DD is slightly different in the English and Spanish versions. Future studies should continue to assess factorial equivalence of RPS-DD language translations to ensure patients’ interpretations and responses to scale items are comparable across languages.

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D081

10:00 AM-11:00 AM

PARENTAL INVOLVEMENT IN TYPE 1 DIABETES ACROSS EMERGING ADULTHOOD: IS IT BENEFICIAL AND FOR WHOM?

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Parental involvement is beneficial for supporting the daily self-regulation of emotions, cognitions, and behaviors involved in managing type 1 diabetes across adolescence (Berg et al., in press), but little is known about what happens to parental involvement across emerging adulthood nor whether it may still be beneficial for diabetes management at this time. Individuals with poorer self-regulation capacities as assessed by executive function are at risk for poorer diabetes management, especially across the transition to emerging adulthood (Suchy et al., 2016, 2017). The study examined whether parental involvement during emerging adulthood may be especially beneficial for young adults with lower executive function across the high risk time of emerging adulthood. Two-hundred and three adults (*M age*=17.74 at baseline) were followed from their senior year of high school and annually for two additional years. Individuals completed measures of how knowledgeable their mothers and fathers were of their diabetes (knowing their blood sugar readings, how much insulin has been taken) as well as general behaviors (who their friends are, where they are at night), performance-based assessments of their executive functions (the DKEFS), and measures of adherence to the diabetes regimen; HbA1c was gathered from home test assay kits. Repeated measures ANOVAS indicated that participants reported significant declines in fathers' general knowledge (no significant declines in mothers' general knowledge), and in mothers' and fathers' diabetes-specific knowledge across each year of the study. Multi-level models with parental knowledge (both within-person and between-person effects) predicting adherence and HbA1c at each time point revealed that in general young adults who perceived that fathers and mothers were more knowledgeable about diabetes and about their lives in general reported better adherence. Within-person effects demonstrated that when parental knowledge was higher than one's average, adherence was also better. Mothers' general and diabetes-specific knowledge was associated with better glycemic control, but only for emerging adults who had poorer executive function ($p < .01$). The results suggest that continued involvement in diabetes management during emerging adulthood is beneficial for adherence and mothers' involvement may be helpful for young emerging adults who may need greater support due to lower self-regulation capacities.

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D082

10:00 AM-11:00 AM

PARTICIPANTS' BENEFITS AND BARRIERS TO IMPROVE DIABETES PROGRAMS IN APPALACHIAN COMMUNITIES

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Introduction: The Diabetes Prevention and Management (DPM) program was implemented in twenty-two sessions over 12 months in two Appalachian churches, which was modeled after the evidence-based National Diabetes Prevention Program and modified to include diabetes management sessions using the American Association of Diabetes Educators Self-Care Behaviors framework (AADE7). Participants provided feedback on the benefits and barriers and suggested improvements of the community-based diabetes program.

Methods: Trained health coaches led culturally-tailored educational sessions and had weekly communication with participants to help them modify health-related behaviors. The benefits and barriers survey was implemented at mid-program and end of the program to examine participant satisfaction of the program; information was also collected on their health status and literacy level. The survey was one of the first to identify the benefits and barriers of a community-based diabetes prevention and management program in West Virginia.

Results: Program participants included adults with dysglycemia (pre-diabetes or had diabetes). Ninety-four adults completed the pre-screening (73% females, 54% with diabetes); 83 participants completed the benefits and barriers survey at 6-months and 68 completed both mid- and final-program assessments (completion rate of 82%). The majority of target audience did not perceive transportation and community location as barriers to participation. Additionally, a majority of participants did not perceive they had trouble remembering instructions provided in the program sessions. Additionally, program attendance and participation allowed the majority to change their lifestyles and were satisfied with the program.

Discussion: This survey was to understand the community's needs, benefits, and barriers while providing a novel way of identifying and overcoming perceived benefits and barriers unique to the Appalachian culture. These findings suggested minimal adjustments to the DPM program while providing insight on increasing program participation.

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D083

10:00 AM-11:00 AM

PILOT TESTING A CULTURALLY TAILORED DIABETES SELF-MANAGEMENT PROGRAM FOR CHINESE AMERICANS WITH TYPE 2 DIABETES

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Background: Although progress has been made in improving the efficacy of Diabetes Self-Management Education (DSME) programs, there continues to be a dearth of research on culturally adapting evidence-based DSMEs for Chinese Americans (CA) with Type 2 diabetes. Through collaborative partnerships with two large community recreation centers and the AHMC hospital network in San Gabriel Valley, California, we developed and pilot tested a culturally tailored DSME program with mHealth technology integration, entitled Culturally Appropriate Strategies for Chinese Americans with Diabetes (CASCADe).

Methods: The CASCADe program utilized a combined theoretically driven and community-participatory approach to develop an evidence-based curricular program consisting of eight weekly sessions of health education and diabetes management. Topics covered include recognition of diabetes and its complications, risk factors, nutrition knowledge, dietary practices, exercise, behavioral self-monitoring, medication adherence, and stress management. In addition, the program includes 1) a home visit for training of monitoring devices use, WeChat app and acquiring family support, 2) a combined format of group class, games, food demonstration, group exercise, video and discussion, 3) WeChat follow-up on education tips, monitoring data summary, and group discussion. The monitoring system used a smartphone to coordinate cloud data transmission from a set of wireless devices to capture daily monitoring data on physical activity, body weight, blood pressure and blood glucose levels. WeChat app (a mobile platform of instant messaging widely used in Chinese population) was used to facilitate behavioral self-monitoring by providing daily messages related to diabetes education curriculum, weekly summary reports on monitoring data as well as reinforcement messages and group discussion on readings and monitoring results implication.

Results: The pre- and post-comparison among 8 participants showed a significant improvement on levels of HbA1c (7.28 vs. 7.68, $p=0.02$, with all except one participant having HbA1c reduction and 50% participants achieving >0.5 HbA1c reduction), self-efficacy (8.45 vs. 6.16, $p=0.04$), quality of life (2.68 vs. 1.92, $p=0.007$) and stress coping skills (3.90 vs. 3.09, $p=0.03$) at 3 months after baseline.

Conclusion: Our pilot study demonstrated the feasibility to implement our CASCADe program among CAs to improve diabetes self-management skills, and provides promising results to further test the efficacy in a larger randomized trial.

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D084

10:00 AM-11:00 AM

SENDING PATIENTS DIABETES SCREENING TEST RESULTS: CHANGES IN COMPARATIVE RISK AND WORRY AND INFORMATION SEEKING BEHAVIOR

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Background: Diabetes screening is an opportunity for healthcare providers to discuss diabetes risk and prevention; however, the impact of receiving diabetes test results on patients' risk perceptions, worry, and information seeking behavior is unknown.

Methods: Patients in a safety-net health system were asked to participate in a longitudinal diabetes screening study. Study participants were 18–65, not currently pregnant, and included those with unknown glycemic status and no resulted screening test in the past two years. At enrollment, interviewers administered items on comparative risk (2 items) and worry (2 items) via telephone in English or Spanish, using a 4-point scale ranging from strongly agree to strongly disagree. Participants were then asked to complete diabetes screening at their safety-net clinic. Two weeks after mailing screening results, patients with normal or prediabetes results ($n = 302$) were contacted to complete a similar assessment of beliefs and behaviors since receiving the results. We assessed: (1) changes in comparative risk and worry; (2) whether changes differed by self-reported results or were associated with information seeking; and (3) whether test results were associated with information seeking ("Since receiving your test results, have you looked for information about diabetes or prediabetes from any source?"). Two-week survey response rate was 59% ($n = 179$).

Results: Most participants correctly reported their test result (96%). Change in comparative risk did not differ between those reporting a normal ($n = 107$) or prediabetes ($n = 72$) result, $F(1, 175) = .41, p = .52$. Patients with prediabetes had greater increases in worry ($M = 2.78$ to 3.02) than those with normal results ($M = 2.68$ to 2.67), $F(1, 176) = 4.20, p = .04, d = .31$. Neither changes in comparative risk nor worry predicted information seeking in either group ($ps \geq .10$). However, patients with prediabetes were more likely to report looking for diabetes-related information (49%) than those with normal results (31%), $\chi^2(1) = 5.77, \phi = .18, p = .02$.

Conclusions: Receiving a prediabetes test result was associated with increases in patient's worry about diabetes and looking for relevant information. These findings suggest that test results potentially prime patients to be receptive to education. Thus, health systems should use the diabetes screening process as an opportunity to engage patients in risk discussions and diabetes prevention interventions.

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D085

10:00 AM-11:00 AM

SLEEP HABITS AND SELF-MANAGEMENT IN TEENS WITH TYPE 1 DIABETES: A QUALITATIVE STUDY

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Sleep has increasingly been identified as a modifiable risk factor for poor diabetes management and suboptimal glycemic control in teens with type 1 diabetes (T1D), but no qualitative studies have been conducted to explore barriers to obtaining good quality and sufficient sleep in this population. We conducted semi-structured interviews with 25 teens with T1D, ages 13–17 (mean age = 15.6 years; 52% female; mean HbA1c = 8.9%; 56% used insulin pumps). Interviews explored teens' sleep habits and barriers to sleep in relation to diabetes management. Interviews were transcribed and each was coded by two raters using Atlas.ti. Inter-rater reliability was 82%. Similar to teens in the general population, teens in our sample described several barriers to obtaining sufficient sleep, and 64% believed that they did not get adequate sleep. Common barriers reported included using electronics (e.g., cell phone, laptop, television) before bed (92%), homework or school-related activities, sports, and other external factors (e.g., siblings, pets, outside noise) that resulted in sleep delay and disruption. The majority of teens described differences between sleep on school days and weekend days/holidays, primarily describing staying up and sleeping in much later on the weekends. Teens also noted several associations between sleep and diabetes management. Teens complained that diabetes often interfered with sleep when waking to treat low blood glucose levels, or in response to alarms (20% of participants reported using a continuous glucose monitor). Teens also perceived that sleep habits had an impact on their diabetes management. For example, teens who slept more than the recommended 8–10 hours reported frequent missed blood glucose checks, especially on the weekends, disrupted meal schedules, and waking up with low blood glucose levels. In addition, teens who reported obtaining insufficient sleep (<8 hours/night) acknowledged consuming caffeine to stay awake, being less aware of their food choices, and forgetting to check their blood glucose levels at the appropriate intervals. Sleep disturbances are common in the T1D population, and the current study provided teens' perspectives on common barriers to obtaining sufficient sleep, as well as the links between sleep and diabetes management. Findings will inform a sleep-promoting intervention for teens with T1D.

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CITATION AWARD WINNER

D086

10:00 AM-11:00 AM

SOCIAL SUPPORT PROFILES OF LATE ADOLESCENTS AND EMERGING ADULTS WITH TYPE 1 DIABETES

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Cluster and profile analyses have been used to a very limited degree in studying adolescents and emerging adults with Type 1 diabetes, despite the potential clinical importance of identifying subgroups and developmental trajectories within this population. Prior research has focused on identifying subgroups of glycemic control and illness coping, or examining longitudinal trajectories of glycemic control in relation to adolescents' self-control and parental monitoring. The present study used survey methods to examine whether there are discernible social-support profiles among late adolescents and emerging adults with type 1 diabetes, whether those profiles are stable across this period of development, and whether those profiles predict glycemic control, adherence, and depression. Late adolescents with type 1 diabetes were recruited during their senior year of high school (N = 247; 60% female; M = 17.8 years old). Participants completed surveys to measure perceived support and diabetes involvement from their doctor, mother, father, friends, and romantic partners, adherence, and depressive symptoms; a blood sample was provided to assay HbA1c. Participants repeated these measures annually for two subsequent years. At each of three time points, a two-cluster solution best fit the data, with group 1 representing "high social support" and group 2 representing "low-to-moderate social support." At each time point, high social support predicted better adherence (t1 = -7.71, t2 = -5.12, t3 = -5.55, all *ps* < .05) and less depression (t1 = 2.26, t2 = 2.16, t3 = 3.62, all *ps* < .05). At T2 only, high social support predicted lower A1c (t = 2.03, *p* < .05). Support was not consistent over time, however. Those with consistent support had lower A1c and marginally fewer depressive symptoms than those with inconsistent support. There was further evidence that those with consistently high support fared best on glycemic control, depression, and adherence at T3, as compared to those with inconsistent or consistently low support. Findings may identify those more at risk for poor diabetes management (low or inconsistent support) that may be targeted for intervention.

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D087

10:00 AM-11:00 AM

THE RELATIONSHIP BETWEEN ILLNESS IDENTITY AND PSYCHOLOGICAL AND DIABETES-SPECIFIC FUNCTIONING IN ADULTS WITH TYPE 2 DIABETES

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Introduction: Many individuals with Type 2 Diabetes Mellitus (T2DM) struggle to adhere to prescribed treatment regimens. Illness identity (i.e., how individuals integrate diabetes into their identity) may influence treatment adherence; yet research on illness identity is limited. The Illness Identity Questionnaire (IIQ) is a recently developed questionnaire that assesses four dimensions of illness identity: Acceptance, Rejection, Enrichment, and Engulfment. The current study sought to determine how different dimensions of identity, measured by the IIQ, relate to psychological and diabetes-specific functioning in individuals with T2DM.

Methods: Adults with T2DM ($N = 282$) were recruited through an online service, Qualtrics, to complete the research survey. Structural equation modeling was used to assess how the IIQ dimensions relate to both psychological and diabetes-related functioning.

Results: Participants were on average 54 years old ($SD = 15.21$), and tended to be female (65.6%), Non-Hispanic (90.4%), and White (87.2%). The structural equation model results demonstrated that Acceptance was significantly associated with less depression ($\beta = -2.32, p < 0.05$), less diabetes distress ($\beta = -2.97, p < 0.01$), better life satisfaction ($\beta = 5.25, p < 0.001$) and better medication adherence ($\beta = -2.07, p < 0.05$). Enrichment was significantly associated with less depression ($\beta = -2.29, p < 0.05$), better life satisfaction ($\beta = 3.86, p < 0.001$), and better diabetes self-care ($\beta = 6.17, p < 0.001$). Rejection was significantly associated with worse depression ($\beta = 2.90, p < 0.001$), poorer diabetes self-care ($\beta = -2.52, p < 0.05$), and worse medication adherence ($\beta = 3.89, p < 0.001$). Engulfment was significantly associated with worse depression ($\beta = 6.42, p < 0.001$), worse life satisfaction ($\beta = -4.61, p < 0.001$), greater diabetes distress ($\beta = 14.76, p < 0.001$), and poor medication adherence ($\beta = 2.72, p < 0.01$).

Conclusions: The IIQ dimensions that were associated with the integration of illness with identity (i.e. Acceptance and Enrichment) were associated with positive psychological wellbeing and better diabetes self-care behaviors; whereas dimensions that reflect poorer identity integration (i.e., Rejection and Engulfment) were generally associated with poorer psychological wellbeing and poorer diabetes-specific functioning. The IIQ may be a useful clinical tool for understanding illness identity in adults with T2DM.

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D088

10:00 AM-11:00 AM

VIRTUAL ENVIRONMENTS PROVIDE THE FULL RANGE OF SUPPORT TO ADULTS LIVING WITH CHRONIC ILLNESS

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Aims: Self-management interventions via immersive virtual environments (VEs) can facilitate support for those living with chronic illness. Yet, whether these Internet environments provide comprehensive support, and, if so, how, remain widely unknown. This study aimed to describe the characteristics of VE support from two perspectives: the aggregate support received by the individual, and the contributions of different VE components. In both cases, Cohen's four types of support (emotional, instrumental, informational, appraisal) served as an organizing framework.

Methods: This study was a secondary analysis that analyzed synchronous conversational data from a study that provided self-management education and support to individuals with type 2 diabetes (T2D) who interacted in a VE. The sample included individuals with T2D ($n = 20$) and diabetes educators/study investigators ($n = 4$). Diabetes educators led two education sessions and one support session per week for six months.

Results: • **Aggregate Support:** A total of 1170 support exchanges occurred in the education ($n = 723, 62%$) and the support ($n = 406, 34%$) sessions, or outside of session times ($n = 41, 4%$). In the aggregate, individuals received substantial informational support (535 or 46% of all exchanges), including information about food (149 or 28% of informational exchanges) and problem solving (85 or 16% of informational exchanges). Participants received substantial emotional support (377 or 32% of all exchanges) and appraisal support (217 or 19% of all exchanges). Under emotional support, exchanges addressed physical health (88 or 23% of emotional support exchanges) as well as distress (189 or 50% of emotional support exchanges), and enacting behaviors (100 or 27% of emotional support exchanges). Under appraisal support, exchanges provided affirmations in response to information seeking (32 or 15% of appraisal exchanges) or self-management behaviors (185 or 85% of appraisal support exchanges). In contrast, the VE provided little instrumental support (41 or 4% of all exchanges).

• **Contributions of VE Components:** When disaggregating by session type, educational sessions provided predominantly informational support (357 or 49% of 723 exchanges). In contrast, general support sessions provided predominantly emotional support (159 or 39% of 406 exchanges).

Conclusions: With the perhaps understandable exception of instrumental support, VEs may provide individuals a full range of informational, emotional and appraisal support. At the same time, their components are complementary. Educational sessions provide mostly informational support, while general support sessions provide mostly emotional support. With this versatility, then, VEs are able to contribute substantially to support for those with T2D and, very likely, other chronic illnesses.

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D089

10:00 AM-11:00 AM

VIVIENDO SALUDABLE: A COMMUNITY BASED PROGRAM TARGETING CLINICAL AND PSYCHOLOGICAL HEALTH IN HISPANIC WOMEN WITH PREDIABETES

Harsimran Singh, PhD¹, John Billimek, PhD², Beatriz Camacho, BA³, Ana Pimentel, MSW⁴, Joanna Gallo Moreno, RDN, CDE⁵, Rommy Andrea Renteros, BSc, MPH⁶, Rocio Valencia, LCSW⁷, Daniel Nadeau, MD⁸

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About 38% of Hispanics have prediabetes and are at an increased risk for developing type 2 diabetes. Culturally competent and sustainable interventions are needed to equip this population with specific lifestyle and psychosocial skills for healthier outcomes. The Viviendo Saludable (VS) program was developed as a 23-week intervention with 12 group sessions (90 minutes each) held every other week. Sessions focused on nutrition, physical activity, and psychological health. Each session was followed by a weekly maintenance phone call to encourage participants to continue with their lifestyle changes. Preliminary efficacy of VS was evaluated in a non-randomized, prospective trial of 34 Hispanic women with prediabetes. Participants were consented and recruited from a community health center and were unaware of their prediabetes status before the study. Prediabetes was determined based on HbA1c (glycated haemoglobin) and fasting glucose values. Participants were evaluated on clinical and psychosocial variables at baseline and post intervention. The majority of participants were married (n=23), employed (n=18), and had no health insurance (n=19). Only 18 (of 34) participants had completed high school or received any further education. The majority (n=20) reported an annual household income of <\$20,000 and indicated concerns with food security (n=19). Adherence to VS sessions was high (80–100%). Pre-post comparisons with Bonferroni correction highlighted significant reductions in BMI (31.7 vs 29.3, p <0.001), body weight (165.8 vs 158.2, p <0.001), waist circumference (38.8 vs 36.3, p <0.001), and HbA1c (5.8 vs 5.6, p <0.001). The majority of participants (n=20) did not have prediabetes at post assessment. Significant improvements were also observed in psychological well-being (15.3 vs 19.5, p <0.001), physical health status (44.5 vs 51.7, p <0.001), and mental health status (46.7 vs 53.4, p <0.001). Exit interviews revealed that instruction around nutrition and psychological health was valued the most by participants. Participants also reported introducing significant lifestyle changes for their family members based on the VS sessions. For program sustainability, 4 women were selected to be trained as promotoras for a future roll out. Findings emphasize the importance of addressing both psychological and clinical health while developing diabetes interventions for underserved communities so that they feel appropriately empowered to achieve healthier outcomes.

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D090

10:00 AM-11:00 AM

GLUCOPILOT: A DATA-POWERED PERSONALIZED NUTRITION DECISION SUPPORT SYSTEM FOR DIABETES SELF-MANAGEMENT

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Diabetes education guidelines recommend that individualized dietary self-management plans be developed for those with type 2 diabetes (T2D). Data generated by diet self-monitoring technologies present an opportunity for data-powered, personalized diet recommendations. Despite the increasing availability of self-monitoring data to improve dietary management of T2D, few solutions have been identified for leveraging these data to provide personalized dietary recommendations in order to improve dietary management of T2D. The goal of this research was to develop and evaluate a suggestion system, GluCopilot, which generates data-powered personalized T2D dietary recommendations.

We used process coding to qualitatively analyze data from 10 registered dietitian (RD) interviews to identify how RDs utilize records of patients' meals and blood glucose levels to generate recommendations to reduce post-meal glucose excursions. Next, we developed a decision tree model to sequentially order themes from the process coding, representing the RDs' counseling process. Two RDs assessed the model's face validity, clinical appropriateness, and utility. We then developed a task-specific ontology of classes and attributes from process coding themes and, using R, programmed a series of functions to transform meal data into personalized patient goals. Using 30-days of meal photos and associated macronutrient data, we compared GluCopilot recommendations to those made by two experienced certified diabetes educators (CDEs) using (1) CDE-generated recommendations and (2) CDE selections from a closed set of recommendations (i.e., eat more/maintain/eat less of specific macronutrients).

Thirty-six process codes and seven themes were identified. Two RDs found the decision tree to be face valid and clinically appropriate with potential for use in clinical practice. GluCopilot was 69% and 83% consistent with CDE-generated and 44% and 67% consistent with the closed-set gold standards.

Although the comparison of GluCopilot to the CDE-generated recommendations was promising, GluCopilot was less consistent with CDEs' choice of closed set recommendations. This raises important questions about whether human experts or computer algorithms are better suited to discerning signals from large patient-generated datasets. The data used here represent patients with few glucose excursions. We plan to evaluate GluCopilot with data from more diverse patients with T2D. As clinicians see the utility of using patient-generated data in personalizing care, GluCopilot represents a first step towards extending the reach of self-monitoring data by synthesizing it with clinical knowledge in a dietary decision support tool.

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D091

10:00 AM-11:00 AM

AN ENVIRONMENTAL SCAN & REVIEW OF ORAL HEALTH PROMOTION APPS: OPPORTUNITIES FOR FUTURE INTERVENTION DEVELOPMENT

Paula R. Blasi, MPH¹, Tooka Zokaie, MPH Candidate, BS², Sheryl Catz, PhD³, Jennifer B. McClure, PhD¹¹Kaiser Permanente Washington Health Research Institute, Seattle, WA; ²University of California Davis, El Dorado Hills, CA; ³UC Davis, Sacramento, CA

Most U.S. adults own a smartphone, making mobile applications (apps) promising tools for promoting healthy behaviors. As a result, there has been an explosion of consumer-facing health promotion apps in recent years. Much is known about apps addressing popular health issues like smoking, diet, and physical activity, but almost nothing is known about the availability or quality of apps to promote better oral health care. Oral disease (e.g., cavities, gum disease, oral cancer) affects millions of Americans annually, resulting in unnecessary pain and suffering and costing the U.S. ~\$120 billion per year. Thus, we sought to better understand the landscape of consumer-focused oral health promotion apps to inform the need for future intervention development. We conducted an environmental scan of apps available in the Apple iTunes and Google Play stores from June-August 2017. We identified all apps that were designed for adult consumers (i.e., we excluded educational apps for dental providers or children). For each app identified we assessed the source, platform, cost, content, and any cited theoretical or empirical basis for the content. Thirty-six apps were identified (9 for iOS, 11 for Android devices, and 16 for either platform). Most (n=31) were free. The producers/sponsors ranged from app developers (n=14) to insurers (n=4) and dental care providers (n=4). Most apps (n=25) were designed for the general public, but the rest targeted specific audiences such as dental insurance plan members (n=4) or dental clinic patients (n=3). Content was heterogeneous. Many, but not all, included some form of oral health education (n=16). Other common features included oral hygiene tracking and reminders (n=9) and various features designed to facilitate seeing a dentist (n=9). Only 8 apps mentioned tobacco use as an oral health risk factor and only 3 cited an evidence base for their information. None cited any theoretical basis for their content. In short, relatively little attention has been focused on developing or disseminating mobile health (mHealth) tools to improve adult oral health care, and existing programs do not appear to have a strong theoretical or empirical basis for their content. As such, an important opportunity exists to develop theoretically and empirically-grounded oral health promotion programs delivered via self-help apps. Such programs could help reduce the burden of common oral diseases in this country.

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D092

10:00 AM-11:00 AM

CO-DESIGNING WITH YOUTH TO DEVELOP A WEB-BASED INTERACTIVE NUTRITION COMIC TO DECREASE CHILDHOOD OBESITY RISK

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Background: A user-centered design approach aims to engage the intended audience throughout development of tools to increase their acceptability and potential effectiveness. While m-Health tools have potential to reach and engage culturally diverse populations, there is limited literature on youth involvement in design and development. We aim to: 1) Describe participatory processes for engaging minority youth in the development of a web-based interactive nutrition comic, 2) Summarize development process findings, and 3) Describe lessons learned through the co-designing process.

Methods: African-American(AA)/Black and Latino youth ages 9 to 12 years (n=37; 54% female; 62% AA/Black, 57% Hispanic) residing in low-income neighborhoods of New York City participated in focus groups and interviews. In Summer 2016, formative research was conducted to identify perceived healthy dietary behaviors, assess technology use, and identify preferred comic storylines and characters. In Fall 2016, finalization of comic story content occurred. In Winter 2017, design thinking approaches (card sorting and sketching) were used to elicit website wireframe feedback. In Spring and Summer 2017, usability testing was conducted with online tool prototypes using a *think-aloud* protocol.

Results: Formative research found that youth believed important health behaviors included increasing fruit/vegetable intake and limiting sugar intake, utilized apps to primarily play games, preferred comics to include action, adventure and fantasy elements, and suggested the main character be a brave teenager who overcame struggles. From these data, the intervention's targeted behaviors were selected and a comic storyline and character profiles were developed and tested. Overall, youth responded positively to the storyline and character personas, and suggested scenarios to make the story more relatable. While assessing website components and design, youth preferred not to receive messages from parents and wanted more details about characters. Tool changes from usability testing included adding a navigation guide and improving graphic designs. Specific comic text was edited to enhance literacy. Lessons learned included testing in pairs led to more meaningful data and a modified *think-aloud* approach was needed.

Conclusion: Engaging youth during development resulted in a tablet-optimized tool to deliver a culturally-tailored interactive nutrition comic. This innovative, technology-enhanced tool will be tested using a two-group pilot randomized study, with the goal of reducing childhood obesity risk in minority, low-income youth.

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D093

10:00 AM-11:00 AM

CREATING A DIGITAL ADVISORY BOARD FOR A LARGE COHORT STUDY

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Community advisory boards have been an important part of community-based research, especially for research on populations that are vulnerable and/or under-represented. There is increasing emphasis on the recruitment of more diverse populations for research to more accurately represent the general population, especially in large cohort studies. However, for large cohort studies to represent populations that are diverse (in terms of race/ethnicity, geography, and other characteristics), there are inherent challenges such as time and location. A digital advisory board may be a more feasible way to incorporate the voices of community members, especially with ever-increasing numbers of the general population gaining access to the internet and also using social media platforms. Using an innovative method that combines traditional features of the community advisory board and key strategies from studies on online communities and social networks, this paper will describe the process for forming a digital advisory board for a large cohort study and early lessons learned.

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D094

10:00 AM-11:00 AM

DETECTING REAL TIME EPISODIC OVEREATING FOR JUST IN TIME INTERVENTIONS

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Obesity, caused primarily by overeating relative to need, is a preventable chronic disease that exacts staggering healthcare costs. Obesity treatment would benefit from an accurate, passive, and timely measure of problematic eating. Current methods assess overeating by comparing overall intake to daily caloric need, a day level measurement. Defining and measuring problematic overeating episodically (per meal/snack) in real-time would allow researchers to test timely interventions to prevent overeating. In the BeYourself study, we followed 30 participants with and without obesity. Dietitians performed 24-hour dietary recall for two-weeks. We operationalize overeating episodically in a manner that is personalized based on the individual's caloric intake distribution, each meal validated by a dietitian. Participants also responded to event-triggered prompts to generate contextual features that surround eating such as whether they felt they overate (subjective overeating). Our operationalized definition of overeating, defined as a meal that exceeds 1 z-score (85.1% percentile) threshold of participants personalized caloric intake distribution (meaning larger than normal meals typically consumed by the participant) correlated with participant subjective overeating response. Fast food and empty-calorie foods like candy and popcorn consistently correlated with episodic overeating. Personalized predictors of overeating episodes existed for each individual and included one participant's overeating that correlated with alcohol consumption during meals. Operationalizing overeating episodically, detecting it objectively and passively (without participant input and burden), learning to predict it, and intervening in a timely manner that adapts to an individual's unique problematic overeating profile, would be foundational to personalized behavioral medicine for obesity.

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D095

10:00 AM-11:00 AM

DEVELOPING AN ONLINE TOOL TO SUPPORT HEALTHY FEEDING BEHAVIORS AMONG URBAN MINORITY PARENTS OF PREADOLESCENTS

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Background: While children transitioning into adolescence (ages 9 to 12) are gaining autonomy and developing decision-making skills, parents still play a significant role in fostering their child's dietary behaviors. As part of the development of a technology-enhanced intervention to promote healthy eating among urban minority preadolescents, research was conducted to develop a parent-focused health promotion tool to support positive feeding behaviors.

Methods: Twenty-four parents (42% African-American/Black, 63% Latino, 96% female) from a New York City community organization participated in focus groups and interviews (with/without child). Formative research was conducted to identify barriers and facilitators to healthy eating/feeding behaviors, and characterize technology use (Summer 2016). Findings informed design of an online tool, which was iteratively developed and assessed using qualitative, co-design, and *think-aloud* approaches to confirm/finalize content (Fall 2016), assess the website wireframe (Winter 2016), and conduct usability testing (Spring-Summer 2017). Sessions were conducted in English or Spanish. Session notes and audio-recordings were reviewed throughout development to design and improve prototypes.

Results: Formative research identified barriers including having picky eaters, limited time/energy to cook meals, and cost. Important feeding behaviors included offering a variety of fruits/vegetables to their child. Suggestions for an online health tool included quick recipes, healthy tips, clear tool navigation, and the use of pictures and visuals. When finalizing the tool wireframe and content, parents preferred a variety of motivational healthy feeding tips that encouraged positive interaction with their child, local family-oriented community events, and a simple, colorful layout with minimal clicking to access links/information. During usability testing, parents responded positively to the content (healthy feeding tips, recipes, coupon, and free community event) and clean layout, especially the use of bright color schemes and easy navigation. Suggestions included incorporating more fruit/vegetable images and action words ("click here") to draw attention to coupon/event links.

Conclusions: Engaging parents throughout development resulted in a web-based, mobile-friendly health promotion tool. It will be tested as part of a larger technology-enhanced intervention using a two-group pilot randomized study, with the aim of reducing childhood obesity risk.

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D096

10:00 AM-11:00 AM

DEVELOPMENT AND TESTING OF A MOBILE-BASED INTERVENTION TO REDUCE HEALTH RISK BEHAVIOURS IN PEOPLE WITH MENTAL HEALTH PROBLEMS

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Background: Substance use and other health risk behaviours (e.g. poor diet and physical inactivity) are much more common among people with mental health problems. Smoking, alcohol misuse, physical inactivity and poor diet are also consistently identified as the top four behavioural risk factors associated with chronic disease such as cardio-vascular disease (CVD) which are responsible for more deaths in this population than suicide. However, due to time constraints, lack of awareness, training and resources, mental health services often confine their services to mental health issues therefore, neglecting these types of health risk behaviours. This presentation describes the development and initial evaluation of the first mobile-based intervention to target multiple key health risk behaviours (smoking, alcohol misuse, poor diet and physical inactivity) for people with mental health problems called MyHealthPA.

Methods: The development of MyHealthPA occurred in four stages: 1) reviewing and addressing the literature; 2) a scoping survey with end-users (n = 251); 3) program development; and 4) pilot testing with young people with and without a previous diagnosis of a mental illness (n = 28).

Results and Conclusions: Overall, MyHealthPA represents an innovative approach to substance use, diet and exercise and chronic disease risk reduction among people with mental health problems. It appears that MyHealthPA is acceptable, easy to use, potentially effective and potentially easy to integrate into existing clinical and public health practice.

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D097

10:00 AM-11:00 AM

DISPARITIES IN MOBILE PHONE USE AMONG DIVERSE PATIENTS WITH TYPE 2 DIABETES

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In the past decade, there has been a surge in the development of mHealth interventions to support self-management of chronic diseases, including type 2 diabetes (T2D). Across many trials, interventions using phone calls, text messaging, and apps to deliver diabetes education have significantly improved patients' self-care and glycemic control. Despite the promise of mHealth to improve health outcomes, understanding the ways in which patients use their phones has implications for who can ultimately benefit. We used baseline data from a text messaging intervention for diabetes self-care promotion to examine how mobile phone owners with T2D used their phones and examined associations between patient characteristics and mobile phone use.

We recruited adults with T2D from primary care clinics who owned a mobile phone with text messaging capability. Participants completed a survey asking about demographics (i.e., age, gender, race, education, income), their health literacy (Brief Health Literacy Screen), numeracy (Subjective Numeracy Scale), and mobile phone use. We examined descriptive statistics and used non-parametric tests of differences to examine associations between patient characteristics and use of texting, smartphones, and apps. We report all associations where $p < .05$.

Participants (N=409) were 55.9 ± 9.8 years old; 54% female; 39% African American; 43% had \leq a high school degree, and 46% had annual incomes or send text messages (2%) because they had reached their monthly limit. Participants who were non-White and had less education, lower income, lower health literacy, and lower numeracy were less likely to use texting to communicate. The majority of participants (82%) owned a smartphone; however, among smartphone owners, less than half (47%) had ever used a health app. Older participants were less likely to own a smartphone. In addition, participants with less education, lower income, lower health literacy and lower numeracy were less likely to own a smartphone and to have ever used a health app.

We found disparities in mobile phone use and smartphone ownership among disadvantaged groups with T2D who also tend to experience worse health outcomes. Despite the potential reach of mHealth interventions to engage patients in their health care and improve health outcomes, neglecting these differences in the design and deployment of mHealth programs may widen health disparities.

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D098

10:00 AM-11:00 AM

ENERGY BALANCE MODELS & BITE GOALS TO MAXIMIZE ADHERENCE TO WEIGHT LOSS TREATMENT: THE BITES PILOT STUDY

Carly M. Goldstein, PhD¹, Diana Thomas, Ph.D.², Adam Hoover, PhD³, Dale S. Bond, PhD⁴, J. Graham Thomas, PhD⁵¹The Miriam Hospital/The Alpert Medical School of Brown University, Providence, RI; ²United States Military Academy, Randolph, NJ; ³Clemson University, Clemson, SC; ⁴The Miriam Hospital/Brown Alpert Medical School Weight Control and Diabetes Research Center, Providence, RI; ⁵Brown University School of Medicine & The Miriam Hospital, Providence, RI**Background:** Online behavioral weight loss (OBWL) treatment can be effective but often produces less weight loss than in-person treatment, likely due in part to insufficient adherence to the prescribed caloric restriction. Technology to convey and support adherence may improve outcomes by helping users understand how non-adherence results in insufficient weight loss or by supporting caloric restriction at mealtime.**Methods:** Adults with BMI 27–45 kg/m² (83.3% women, mean±SD age 49.8 ± 8.9, BMI 38.4 ± 11.4) were randomized to 12 weeks of OBWL alone (N=9), OBWL plus energy balance modeling (OBWL+EBM, N=7) that involved weekly feedback in the form of a graph depicting their actual and a range of their expected weight loss based on their personalized physiological parameters, or these two interventions plus the provision of the wrist-worn Bite Counter device (OBWL+EBM+BC, N=8) that was used to set a EBM-based within-meal bite goal with alarm after two consecutive weeks of lower than expected weight loss per the EBM. All 24 participants were weighed weekly at the clinic for 24 weeks and the EBM and BC interventions were continued during weeks 13–24. Participants were assessed at baseline, 3-, and 6-months.**Results:** The experimental interventions were administered successfully. Study completion rates were 44.4% in OBWL, 74.4% in OBWL+EBM, and 62.5% in BWL+EBM+BC (p=.53). Failure to complete was most often attributed to dislike of weekly weigh-ins, of which 67.4% were attended across groups. In intent-to-treat analysis with zero weight loss imputed for missing data, mean±SD weight loss (kg) was 4.0 ± 5.0 in OBWL, 4.6 ± 5.1 in OBWL+EBM, and 5.3 ± 3.7 in OBWL+EBM+BC at 12-weeks (p=.85) and 3.7 ± 4.4 in OBWL, 5.9 ± 7.6 in OBWL+EBM, and 6.3 ± 4.7 in OBWL+EBM+BC at 24-weeks (p=.58). The BC was used 120.5 ± 46.1 (71.7%) of the 168 days it was instructed to be used per participant.**Conclusion:** EBM and BC were feasible for administration but acceptability of the interventions was low due to the requirement for weekly clinic weigh-ins. Though not statistically significant in this small sample, the larger mean weight losses achieved via these interventions warrant further investigation in an adequately-powered clinical trial without clinic weigh-ins. EBM and BC may support weight loss in middle-aged adults with excess weight who are also engaging in a structured, empirically-based weight loss program.

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D099

10:00 AM-11:00 AM

ENGAGING USERS IN THE MHEALTH DESIGN PROCESS - OVERWEIGHT/OBESE WOMEN'S PREFERENCES FOR A PRECONCEPTIONAL HEALTH INTERVENTION

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The prevalence of maternal perinatal obesity is increasing, posing health risks for both mother and child. The Strong Healthy Women (SHW) intervention is an evidence-based intervention to reduce adverse perinatal risk factors and improve women's preconceptional health. As designed, however, the program is delivered in face-to-face sessions and is thus resource- and time-intensive. Mobile health (mHealth) technologies afford an opportunity to expand SHW reach while reducing burden and cost. Our prior research suggests preconceptional women are accepting of using smartphones for behavior change, yet few studies have engaged them in the design of a targeted mHealth intervention.

Objective: To evaluate women's preferences for receiving SHW content via smartphone to enhance the design of SMART SHW, a redeveloped version of the intervention that utilizes smartphones to enhance program delivery.**Methods:** Semi-structured focus group interviews were conducted with overweight/obese (M BMI= 31.4) preconceptional community women (N= 40). Participants were presented with all SHW components across four content areas (physical activity, nutrition, stress, weight management) and provided preferences for program elements viewed as acceptable to convert to mobile. Thematic analysis was used to analyze interview data. Separately, a scientific team conducted an iterative review of the data to determine which aspects of SHW were feasible to modify for delivery via smartphone.**Results:** Women preferred to receive SHW communications, surveys, and educational materials on their smartphones via texting, mobile websites, and a SMART SHW app; MyFitnessPal and a pedometer were preferred methods for tracking nutrition and activity. Salient mHealth design themes were using online videos to supplement the curriculum, providing popups as reminders, and presenting on-screen information in a concise format. The scientific team incorporated 87% of participant preferences in designing the final prototype.**Conclusion:** Smartphone devices can reduce implementation burden and enhance the reach of face-to-face behavioral interventions. Engaging target users (overweight/obese preconceptional women in this case) in the mHealth redesign process, particularly through semi-structured focus groups, is a feasible and useful approach. By leveraging user preferences this method guides the development of an intervention framework that is highly acceptable to the target participants.

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D100

10:00 AM-11:00 AM

EVALUATION OF THE IMPACT OF A DIGITAL HEALTH PLATFORM ON ASTHMA SELF-MANAGEMENT

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Louisville ranks in the top 20 most challenging places to live with asthma in the US. Public and private stakeholders established an innovative community program using a digital health platform to help improve the asthma burden. The objective of this project was to evaluate motivations for participation in the program and to assess if a digital health platform contributes to improved asthma self-management. Residents with asthma in Louisville enrolled in the program and recorded their medication use with a wireless, GPS-enabled sensor, which passively collected the date, time, and location of inhaler use. Participants received access to a digital health platform including smartphone and web-based applications that provided information about their medication use trends, asthma control, education, and personalized support for 12 months. Participants received electronic surveys at program start and completion that evaluated their motivation for participating, health goals, understanding of their asthma, and learnings as a result of the program. A subset of participants responded to both surveys (n=57). The top three reasons for joining the program were to improve asthma control, learn about asthma triggers, and support a community program. Respondents cited a number of health goals, including feeling more in control of their asthma, having fewer asthma attacks, and missing fewer days of work or school. Respondents reported improved knowledge about their condition: 86% reported that they now understand their asthma either “very well” or “well,” 58% reported that they can always tell when their asthma is getting worse, and 35% reported that they know what triggers their asthma attacks. Respondents reported progress on their goals including knowing more about their triggers (63%), having fewer attacks (60%), feeling more in control of their asthma (60%), and feeling more confident taking their medication on time (42%). Fifty-six percent of respondents reported talking with their provider about the information from the digital platform. Use of a digital health platform successfully led to improvements in asthma self-management. Participants improved their understanding of their asthma, achieved asthma health goals, and initiated conversations with their healthcare provider. More work is needed to understand mechanisms of improvement and to identify ways to scale the platform to meet the needs of diverse participants.

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D101

10:00 AM-11:00 AM

FEASIBILITY AND ACCEPTABILITY OF A PHARMACIST-LED MOBILE APPROACH TO IMPROVING HYPERTENSION MANAGEMENT

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Hypertension (HTN) affects about 78 million Americans and adds significant cost to our healthcare system, making it an important public health issue. Overall, only about 50% of patients with HTN achieve adequate blood pressure control. Clinical pharmacists embedded in primary care settings are becoming increasingly common, and have been shown to be a valuable strategy for managing HTN. Mobile health (mHealth) is increasingly touted as the future of medicine, and has tremendous potential to support pharmacist HTN management, yet evidence supporting its use is not well documented. The goal of this pilot study was to establish the feasibility of a clinical pharmacist-led mHealth intervention in primary care patients with uncontrolled HTN. We conducted a one-group 12-week pre-/post- pilot study of BPTrack, a pharmacist-led mobile intervention that supports patient home blood pressure monitoring, medication adherence, and communication with a clinical pharmacist who is managing patient HTN. Clinical pharmacists were able to easily view participant data via a clinical app and use this data in their ongoing HTN management efforts. Participants in this study were recruited from a primary care setting and were between the ages of 18–65 years, had been diagnosed with HTN, were taking at least one antihypertension medication, and had uncontrolled HTN (SBP > 140 mmHg and/or DBP > 90 mmHg on repeat measurements as documented in the medical record). We collected baseline and 12-week follow up data from 13 individuals (mean SBP=137.6 mmHg, SD=11.4 mmHg; mean DBP=88.2 mmHg, SD=7.2 mmHg). Preliminary data from this pilot indicate that BPTrack participants had significantly lower SBP and DBP at 12-week follow up compared to baseline (mean change SBP = -6.62 mmHg, t(12)=2.72, p=.02; mean change DBP = -5.65 mmHg, t(12)=4.13, p=.001). Moreover, the use of BPTrack was acceptable to participants, with the majority of participants agreeing / strongly agreeing that they would recommend it to others (100.0%), liked knowing someone was watching their BP in between visits with their primary care physician (100.0%), were satisfied with the program (92.3%), and felt the program was beneficial to their overall health (92.3%). Preliminary results from this pilot suggest that our mobile approach to supporting clinical pharmacist management of HTN may be a feasible and acceptable approach for use within primary care settings.

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D102

10:00 AM-11:00 AM

IDENTIFYING MECHANISMS OF ACTION IN A MOBILE SMOKING CESSATION APP: A QUALITATIVE APPROACH

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Introduction: Although the role of qualitative research has been emphasized in understanding how users interact with digital interventions, such research is sparse for smoking cessation apps. In particular, more research is needed on the processes through which apps influence cessation (Mechanisms of Action, MoAs). The present study seeks to elucidate perceived MoAs for a just-in-time (JIT) momentary lapse avoidance intervention, MyQuit USC (MQU). MQU is a highly personalized quit app that delivers tailored reminders for implementation intentions (II) to avoid lapse during user-specified “high risk” smoking hours.

Methods: Korean American young adult smokers (18–25 yo) participated in semi-structured interviews (~30–60 mins) upon using MQU for 4 weeks. We report on the experiences of a subset of these participants (n=20; 16 M, 4 F; target N=60). A preliminary code list was created inductively using open codes derived from the first 10 interviews and then compared with constructs described in the Theoretical Domains Framework. New codes were created as additional MoAs emerged in the remaining interviews. Thematic analysis was performed using Atlas.ti 7.5. The authors refined codes iteratively and discussed emergent themes.

Results: Three major themes emerged and provide insight for MoAs in achieving lapse avoidance: 1) Behavioral Regulation, which refers to strategies used to avoid lapses, e.g. staying indoors. Although we designed MQU to facilitate behavioral regulation via II reminders delivered JIT, participants frequently described examples of behavioral regulation beyond their planned IIs, e.g., not buying packs; 2) Change in Motivation for Cessation, which was often described in relation to greater awareness of one’s smoking frequency or quit progress; and 3) External Factors Unrelated to MQU, such as being too busy to smoke and spending time with family. We also noted abstinence self-efficacy as an important factor; those with higher levels of abstinence self-efficacy tended to describe MoAs unrelated to MQU and negative experiences with the app.

Conclusions: Qualitative data from an ongoing investigation provides a rich account of users’ perspectives while using MQU during a quit attempt. Participants described a range of MoAs for lapse avoidance, a sizable portion of which were not part of our intended intervention or were unrelated to MQU. Our findings highlight the specific app features that facilitated lapse avoidance and potential user characteristics that may have influenced prominent MoAs throughout a cessation attempt. Future work will elucidate additional MoAs and triangulate findings with log data and EMA reports.

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D103

10:00 AM-11:00 AM

IMPLEMENTING TEXT MESSAGING TO ENHANCE DELIVERY OF THE DIABETES PREVENTION PROGRAM IN A DEVELOPING NATION

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There is great promise in leveraging mobile technology to enhance global health intervention efforts, particularly given the rising prevalence of lifestyle related disease in developing countries. South Africa (SA) has increasing rates of diabetes mellitus (DM) and cardiovascular disease (CVD), and many communities face disparities in access to care. Previous work in SA demonstrates the potential utility of text messaging for expanding intervention reach and increasing participant adherence, as ~90% of adults own a mobile phone. Yet, evidence is scant regarding how to develop and implement text messaging systems to supplement interventions in the developing world. The Diabetes Prevention Program (DPP) is an empirically supported approach for reducing chronic disease risk, and our team is currently adapting the program for delivery in SA. One goal of this work is to implement a mHealth component of text messaging to enhance the program curriculum and increase intervention reach in resource poor SA communities. Messaging is designed to reinforce session content, enhance motivation, planning, self-efficacy, and provide positive affirmation to participants. To develop content-reinforcing messages, we reviewed the seventeen-session curriculum and existing literature to identify nine overarching content domains: physical activity; healthy eating; tracking; shopping/cooking; reducing barriers; stress; mental health; social support; maintenance. Messages (N= 336) were stratified by content domain, message type, and DPP session. We developed two independent message banks: session-specific messages sent between program meetings, and generic texts (i.e., not tied to session content) that can be sent as general support (e.g., motivational enhancement) or when program meetings are delayed (e.g., holidays). After iterative development and refinement, messages were reviewed by SA community advisory board members for cultural appropriateness and translated to the Xhosa language. A system implementation logic model was established that specifies delivery frequency and timing. Custom text messaging technology (e.g., web-based management platform) was developed for implementing the system and integrated with a third-party SA company to gain access to SA cellular networks. In addition to establishing the feasibility and contributions of this approach, we also present lessons learned and extractable principles that may be of use for other mHealth projects in similar contexts.

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D104

10:00 AM-11:00 AM

IS THERE A MINIMUM SELF-MONITORING FREQUENCY FOR EFFECTIVE WEIGHT LOSS?

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Background: Self-monitoring of diet and physical activity is the cornerstone for weight loss interventions; a consistent decline in adherence to self-monitoring over time is well documented. To date, there is a gap in the literature on minimum self-monitoring frequency required for effective weight loss.

Purpose: To determine the minimum effective frequency (MEF) of self-monitoring of diet and exercise in individuals with type 2 diabetes and concurrent chronic kidney disease. MEF was defined as the optimal threshold adherence to self-monitoring at which effective weight loss was achieved.

Methods: This study was a secondary analysis of data collected from an ongoing randomized clinical trial, the *Healthy Hearts and Kidneys (HHK) Study* (R01-DK100492). Data from 35 HHK Study participants enrolled in 2 of the 4 study arms were analyzed: (1) MONITORING: mobile self-monitoring of diet and physical activity via MyNetDiary™ iPad application, (n=17), and (2) COMBINED: MONITORING + Social Cognitive Theory-based behavioral counseling, (n=18). Fourteen-week cumulative percentages of days with activities logged for exercise (>0 kilocalories recorded) and for diet (>1 meal recorded) were examined.

Logistic regression was used to check the association between each self-monitoring variable (exercise/diet) and effective weight loss, which we defined as the median weight loss in the cohort. The area under the receiver operating characteristic curve (AUC) was used to evaluate the predictability of each self-monitoring variable (exercise/diet) for effective weight loss. The optimal cutoff was the value with the highest sensitivity and specificity.

Results: 3-month median weight loss for the two groups was 2.22%, which was used to define effective weight loss (=1 if >2.22%; =0 if <=2.22%). Exercise logging was significantly positively associated with effective weight loss (p value=0.018) after adjusting for age, gender, treatment group, employment, financial need, and marital status. The AUC for predicting effective weight loss based on exercise logging was 0.675, and the optimal cutoff on exercise logging was 70.56% (sensitivity = 0.941, specificity = 0.444). No significant result was found for meal logging.

Conclusions: Daily exercise logging can be used to predict effective weight loss. This MEF of 70.56% daily exercise logging for 3 months could inform adherence strategies for patients enrolled in weight loss programs that employ mobile self-monitoring.

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D105

10:00 AM-11:00 AM

OUTCOMES OF A NATIONAL PHARMACY-LED DIGITAL HEALTH PROGRAM WITH BIOMETRIC TRACKING AND GOAL SETTING TO ACHIEVE WEIGHT LOSS

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Background: More than one third of U.S. adults are obese¹. A loss of 5% of body weight can result in positive clinical outcomes including the management of chronic disease². Digital health applications can be used to aid in weight loss and maintenance.

Objective: To describe the impact of a pharmacy-led digital health program on weight loss and to examine the association between engagement in wellness goals and weight loss outcomes.

Methods: We assessed weight loss among users of a digital health program, Your Digital Health Advisor (YDHA). Participants started a weight loss goal and recorded at least five YDHA entries, at least two of which were weight entries within a 2–12 month period. YDHA is a part of Walgreens nation-wide Balanced Rewards for healthy choices (R) program which provides small financial incentives for the achievement of health goals. The goals are self-selected and allow the user to track their progress. The program is offered at no cost online and as a mobile phone application. ANOVA and logistic regression models were used to study the relationship between goal engagement (exercise, nutrition, or stress) and loss of $\geq 5\%$ baseline weight.

Results: Participants (n=9,403) had a mean age of 42.69, median baseline weight of 181 pounds, and were mostly female (88.11%). Most participants recorded weight loss; 29.72% lost at least 10 pounds and 30.59% lost $\geq 5\%$ of their baseline weight. Nearly a third of participants achieved their weight loss goal (31.53%) and over half (55.27%) achieved at least one wellness goal (exercise, nutrition, stress). Those who lost $\geq 5\%$ of baseline weight recorded 31.03 more wellness goal entries than those who lost < 5% of baseline weight (p < .0001). After controlling for covariates, participants who achieved at least one goal had 1.35 (95% CI 1.22–1.48) greater odds of losing $\geq 5\%$ of baseline weight compared to those who did not achieve any goals. The exercise goal was most utilized; those who achieved this goal had a 1.15 (95% CI 1.04–1.27) increased odds of losing $\geq 5\%$ of baseline weight.

Conclusions: Nearly one third of users tracking weight in a national pharmacy-led digital health program achieved clinically significant weight loss. Engagement and achievement of wellness goals was associated with an increased odds of losing $\geq 5\%$ of baseline weight. Digital health programs such as YDHA play a significant role in helping participants track and maintain their weight goals.

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D106

10:00 AM-11:00 AM

SMOKERS' ENGAGEMENT IN A HEALTHY EATING TEXT MESSAGING PROGRAM AND DUAL PARTICIPATION IN A SMOKING CESSATION PROGRAM

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Background: Smokers trying to quit often cite weight gain as a barrier to quitting. To address this concern, the National Cancer Institute Smokefree.gov initiative provides resources to help smokers manage their weight during a quit attempt. One of these resources is HealthyYouTXT (HYTXT), a six-week text messaging program that provides tips, and supports users in trying to eat healthier.

Purpose: This study assessed baseline characteristics and engagement among HYTXT users, comparing those who were also enrolled in SmokefreeTXT (SFTXT), a separate six-week smoking cessation text messaging program, to those who were not. Engagement outcomes for HYTXT users participating in the SFTXT program were also explored.

Methods: Baseline smoking status is assessed in both programs. We conducted descriptive analyses to characterize users and used multivariate regression models to identify predictors of HYTXT engagement.

Results: Between October 2016 and July 2017, 437 users enrolled in HYTXT. HYTXT users were predominately female (86.3%) and a mean age of 41 years. Most users were current or former smokers (current - trying to quit: 44.1%; current smokers – not actively trying to quit: 20.2%; former smokers: 20.2%). Approximately half of users completed the program. Users who dropped out before program completion spent an average of 13.3 days in HYTXT. Forty-three percent of HYTXT users were also enrolled in SFTXT. These HYTXT users were more likely to be female and to report currently trying to quit smoking than users not enrolled in SFTXT. In multivariate analysis, there were no significant differences in days in program or dropout rates by smoking status or SFTXT enrollment.

Of the HYTXT users participating in SFTXT, 42.3% reset their quit date at least once to restart the cessation program after facing a setback (i.e., slip, relapse), and 60.3% completed the SFTXT program. Both these percentages are higher than the average for SFTXT users overall.

Conclusion: These analyses indicate that a sizeable proportion of individuals enrolled in the HYTXT were also enrolled in SFTXT. Data revealed that those smokers enrolled in both text programs had higher engagement in SFTXT than is usually seen for SFTXT, although significant differences were not seen in HYTXT program completion. These findings highlight the importance of weight concerns for many smokers and reveal the potential that integrating messaging from both programs could have on treatment outcomes.

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D107

10:00 AM-11:00 AM

TEMPORAL ASSOCIATIONS BETWEEN COMMUNICATION, MOOD, AND RELATIONSHIP SATISFACTION: AN ECOLOGICAL MOMENTARY ASSESSMENT STUDY

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Few studies have examined relationship communication (disclosure, responsiveness) among adult samples in naturalistic, day-to-day settings. We examined lagged (afternoon to evening) associations between communication with one's partner and a) negative affect and b) relationship satisfaction (RELSAT) using ecological momentary data collected via a smartphone application – in preparation for a larger project focused on couples coping with cancer. Constructs were assessed using items from standard questionnaires: 2 items from the Protective Buffering scale (protective buffering), 4 items from the Emotional Disclosure Scale (enacted disclosure, perceived partner disclosure, enacted holding back, and perceived partner holding back), 6 items to assess responsiveness (to what extent did you support/ understand/ criticize your partner) and perceived partner responsiveness (to what extent did your partner support/ understand/ criticize you), 9 items from the POMS (negative affect), and 1 item from the Dyadic Adjustment Scale (RELSAT, evening only). Adults (N = 29; M age = 36.5; 86% female; 90% Caucasian and 7% Hispanic) in a married or cohabiting partnered relationship ≥ 1 year in length recruited from researchmatch.org received 2 smartphone prompts per day for 14 days, one in the afternoon and one in the evening. Of 756 prompts sent, 606 (80%) were responded to. Multilevel regression models yielded consistent findings for within-person lagged associations. Afternoon protective buffering predicted greater evening negative affect, $b = 0.128$, $p = .03$. Afternoon disclosure (both enacted and perceived, $bs = 0.159$ and 0.226) and responsiveness (both enacted and perceived, $bs = 0.347$ and 0.199) predicted greater evening RELSAT, $ps < .05$. Cross-lagged models predicting evening communication from afternoon negative affect and afternoon communication from the previous evening's RELSAT were not statistically significant ($p > .05$), bolstering the notion that communication precedes affect and RELSAT but not vice versa. Findings provide ecologically valid support for the critical role of communication in daily functioning and offer implications for the delivery of couple-based communication interventions designed to optimize emotional and relationship wellbeing.

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D108

10:00 AM-11:00 AM

USER FEEDBACK ON THREE DIFFERENT MOBILE DIET TRACKING METHODS USED IN BEHAVIORAL WEIGHT LOSS INTERVENTIONS

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Background: Dietary self-monitoring (DSM) is associated with increased weight loss in behavioral interventions. Traditional methods of DSM, such as food diaries and calorie counting, can be burdensome. Mobile apps and devices may offer more convenient methods of DSM, but little is understood about users' perception and satisfaction with these novel apps/devices. The purpose of this study was to assess user satisfaction with and feedback about three methods of mobile DSM from two mobile weight loss interventions.

Method: Overweight and obese adults (n=125; mean BMI=34.6 ± 5.6 kg/m²) from two different randomized controlled weight loss interventions (2SMART, DIETm) were randomized to one of three diet tracking conditions: a wearable Bite Counter device (Bite), standard DSM app, FatSecret (App), or photo meal tracking app, MealLogger (Photo). Participants received twice weekly behavioral weight loss podcasts and tracked their diet with the assigned technology. At 6 weeks, 100 participants (Bite, n=31; App, n=48; Photo, n=21) completed a survey measuring satisfaction with their device and provided feedback using a 7-point Likert-type scale. Survey questions assessed ease of use, novelty, ease of regular engagement, ease of understanding feedback, likeability, and attribution of device to weight loss. ANOVA with Tukey's post hoc analysis were used to evaluate differences between devices.

Results: Bite participants were more likely to agree that their device was novel (P<0.001), but also more difficult to use (P=0.03) compared to participants using the standard DSM app. Bite and Photo participants reported that they forgot to regularly use their device more than the App group (P<0.001). There were no significant differences among the three groups for likeability, difficulty in understanding feedback, or attribution of device to weight loss (all P's >0.05).

Conclusion: Mobile technology to encourage DSM presents promise in increasing user engagement and ease of use. More research should be done to understand associations between user satisfaction and rates of DSM, and features of mobile technology that can increase engagement. Early interventions to prompt user engagement and offering choices or combinations of DSM methods to provide users with options should be considered to increase DSM and weight loss.

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D109

10:00 AM-11:00 AM

WHO VOLUNTEERS TO PROVIDE ONLINE PEER MENTAL HEALTH SUPPORT, AND WHY? LESSONS FROM THE 7 CUPS OF TEA LISTENER COMMUNITY

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Rationale. Little is known about why individuals voluntarily provide online social support to others. To study this question, we collected survey data from volunteer Listeners on the *7 Cups of Tea* (7cups) platform, a community of >220,000 Listeners who help over 1.3 million people per month. Listeners complete an online active listening course before connecting anonymously with members for one-on-one chats. By learning about the motivations and characteristics of Listeners, we hope to provide insights relevant to recruiting, retaining, and motivating volunteers on this and similar platforms.

Methods. New listeners received emailed survey invitations from 7cups administrators during a 5 month period (March to September, 2017). 250 answered at least 1 question (analyzed here), and 193 completed the survey.

Results. 74% were women, 22% were men, and 4% had another gender identity or did not disclose. The median age was 23 years old. **Motives.** Participants completed the Volunteer Function Inventory, a 30-item scale characterizing 6 motivations for volunteering using a 5-point Likert scale (1=not at all to 5=extremely). Listeners reported greatest motivation from altruistic values (M=4, SD=0.84), followed by understanding (M=3.63, SD=0.91), self-enhancement (M=3.00, SD=1.12), self-protection (M=2.90, SD=0.84), career (M=2.33, SD=1.11), and social (M=1.89, SD=0.91). Despite being a weaker motivation, self-protection was most strongly associated with having completed more chats as a listener (r=0.34, p<0.001) and being listened to (r=0.23, p=0.001). Self-enhancement motivations were likewise associated with having completed more chats as a listener (r=.27, p<0.001) and being listened to (r=0.20, p<0.01). **Issue preferences.** 7cups allows Listeners to customize their profiles by selecting preferred issues about which to listen. We asked participants to report which of 33 issues they had personally experienced (past or current), and about which (if any) they preferred to listen. Participants reported a mean of 7.0 current issues (SD=5.5) and 8.1 in the past (SD=5.2). Rates of psychological distress were highest, with 83% of Listener respondents reporting ever struggling with anxiety, 79% with loneliness, and 77% with depression. The majority (73.4%) reported a preference for listening to individuals with particular issues. Respondents preferred listening to others with their own issue 50% of the time for current issues and 32% for past issues.

Discussion. Altruism was the strongest motive for Listening, but ego-centric motives (i.e., self-protection and self-enhancement) were associated with frequency of volunteering. Many 7cups Listeners reported psychosocial issues in their own lives, and often preferred to listen to others facing the same issues. This insight could be leveraged to optimize volunteer recruitment and retention on 7cups and similar peer support platforms.

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D110

10:00 AM-11:00 AM

ALCOHOL USE AND DEPRESSION OVER TIME IN A NATIONAL COHORT OF HIV+ LATINO/A AND NON-LATINO WHITE PATIENTS IN HIV CARE

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Background: Nearly 1 in 3 people living with HIV (PLWH) report hazardous alcohol use or meet criteria for a mood disorder, primarily major depressive disorder. However, we know less about how alcohol use and depressive symptomatology change over time in PLWH regularly seen in HIV care, especially for Latino/as. The objective of this study was to model the trajectories of alcohol use and depressive symptoms between HIV+ Latino/a and non-Latino/a White patients.

Methods: Patients were enrolled in the Center for AIDS Research (CFAR) Network of Integrated Clinical Systems (CNICS) study, a cohort of PLWH receiving care at seven university-affiliated HIV care clinics across the U.S. CNICS participants typically complete a patient reported outcome survey at primary care visits every 4–6 months. Using data from 2007 to 2013, we examined depressive symptoms via the PHQ-9, hazardous alcohol use via the AUDIT, and controlled for demographics (sex, viral load, race/ethnicity, and age). We analyzed survey data in six-month intervals for 30 months (five time points). We performed a latent growth curve model using Mplus V8, adjusting for missing data using the full information maximum likelihood method.

Results: Model fit indices suggested that the models fit the data well (RMSEA <.05, CFI>.98 and SRMR=.02). In 3088 patient observations (27% Latino/a), the intercept factor mean for depression ($b=3.98$, $p<.001$) and the slope factor for depression ($b = -.43$, $p<.01$) were statistically significant, indicating that the severity of depression decreased over 30 months. Depression intercept scores were positively associated with alcohol use intercept and slope ($r=.40$ & $.04$, $ps<.05$), suggesting that higher depression scores at baseline were positively associated with greater alcohol use at baseline, and increased alcohol use over time. Lastly, Latino/as and non-Latino White patients did not differ in baseline depression or alcohol use scores, or their growth over time.

Conclusion: Among PLWH in routine HIV care, depressive symptoms were indicative of increased alcohol use at baseline and over time. However, being seen regularly in HIV care was associated with decreases in depression. We also did not find differences in outcomes between Latino/a and non-Latino White patients, despite the evidence elsewhere for ongoing HIV-related health disparities. We speculate this could be due to a potentially high level of acculturation among this group of Latino/as. To fully optimize HIV treatment and improve the quality of life of PLWH, we must continue to solve the challenges of mental health and substance use.

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D111

10:00 AM-11:00 AM

BEHAVIORAL DISENGAGEMENT MODERATES THE RELATIONSHIP BETWEEN INTERNET SEXUAL SAFETY KNOWLEDGE AND SEXUAL RISK IN HIV+ MSM

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Because many HIV-positive men who have sex with men (MSM) seek sexual partners online, an understanding of the factors that influence risky sexual behavior in this population is needed to inform HIV prevention strategies. In the present study, we examined the relationship between sexual health knowledge and risky sexual behavior in a sample of 127 MSM with HIV who reported using the Internet to meet sex partners (mean age=44.4; 42.5% non-White). In particular, we examined trait coping strategies as moderators of the health information—sexual risk behavior relationship using the COPE (Carver et al., 1997). Participants' knowledge of safe online partner-seeking behavior was assessed with items such as, "Can finding out the HIV status of potential partners met online have health benefits?" Self-reported sexual risk behavior was defined as the number of times a participant reported condomless anal intercourse with HIV serodiscordant (HIV/unknown status) male partners. Overall, 55.1% of participants endorsed at least one instance of this sexual risk behavior. To examine factors associated with sexual risk behavior, negative binomial regression was applied. As hypothesized, greater knowledge of online HIV safety behavior was associated with fewer acts of condomless anal intercourse with negative/unknown status partners ($B= -.271$, 95% CI [-.535, -.007], $p=0.044$). This relationship was moderated by trait disengagement coping ($B= .141$, 95% CI [-.040, -.005], $p=0.011$), such that the negative relationship between sexual health knowledge and sexual risk behavior was not observed in individuals who reported high levels of behavioral disengagement. These effects held when controlling for participants' reported depression (CES-D; Radloff, 1977) and education levels. Neither sexual health knowledge nor behavioral disengagement were associated with rates of condom-protected sex with either serodiscordant or seroconcordant male partners. These results support the notion that information regarding Internet sexual safety is an important determinant of sexual risk behavior. Moreover, these results underscore the insufficiency of information alone; efforts to promote effective coping skills may be particularly important for MSM living with HIV who seek partners online.

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D112

10:00 AM-11:00 AM

EXPERIENCED STIGMA AND TOBACCO USE AMONG PEOPLE LIVING WITH HIV: THE MEDIATING ROLE OF AVOIDANCE COPING

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Background: People living with HIV (PLWH) face a greater burden of stigma and discrimination related to HIV. In addition, HIV stigma intersects with other forms of stigma related to sexual orientation and race. These chronic stressors may be associated with negative health behaviors, such as tobacco use. PLWH have approximately double the rate of tobacco use compared to the general population. Smoking can have particularly negative consequences in the context of HIV and lead to comorbidities (e.g., opportunistic respiratory infections, COPD, lung cancer). Understanding the unique risk factors for tobacco use among PLWH can help improve smoking prevention and cessation programs.

Purpose: The purpose of the current study was to explore the psychosocial context of tobacco use in PLWH, examining avoidance coping as a mediator in the relationship between experienced stigma and tobacco use. Three different types of stigma were assessed including HIV stigma, sexual orientation stigma, and race-related stigma.

Methods: Participants included 203 PLWH recruited from an HIV primary care clinic in Birmingham, AL. Participants responded to parallel items assessing their experiences of stigma related to their HIV status, sexual orientation, and race. They also reported their likelihood of engaging in avoidance coping strategies in response to stress (e.g., “I try to forget the whole thing.”). Current tobacco use was assessed at their clinic visit.

Results: Approximately 24% of the present sample reported current tobacco use. All three forms of stigma were associated with avoidance coping. Three separate mediation models adjusting for demographic variables and the other forms of stigma were evaluated. The indirect effect of HIV-related stigma on likelihood of tobacco use through avoidance coping was significant when controlling for the effects of sexual orientation stigma and race-related stigma.

Conclusions: These findings suggest avoidance coping serves as a mechanism for the association between experienced stigma and tobacco use. HIV stigma was associated with tobacco use through avoidance coping, even when controlling for other forms of stigma PLWH may experience. Future research may uncover if this effect on tobacco use remained because HIV stigma is the most salient form of discrimination PLWH face, and if the relationship between HIV stigma and smoking risk remains over time. Given the disproportionate rate of smoking in PLWH, behavioral scientists and interventionists may extend their reach by including content specific to coping with experiences of stigma in individuals' communities to smoking prevention and cessation programs targeting PLWH.

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D113

10:00 AM-11:00 AM

HIV MEDICATION-ALCOHOL INTERACTION BELIEFS AND MEDICATION NONADHERENCE AMONG HIV + HEAVY DRINKING MEN WHO HAVE SEX WITH MEN.

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Rationale: Alcohol use is associated with low adherence to antiretroviral therapy (ART) for people living with HIV, which can result in poor viral suppression. Thus, it is crucial to examine what factors influence the association between alcohol use and ART adherence. Research indicates that beliefs regarding whether alcohol reduces ART effectiveness may influence ART nonadherence in general and specifically, nonadherence when drinking. Such research should be expanded upon to a wider range of populations and treatment settings.

Objective: The purpose of this study was to examine beliefs in reduced ART effectiveness when drinking, skipping ART when drinking, and overall ART adherence in a sample of heavy drinking HIV+ men who have sex with men (MSM).

Methods: Data were derived from a subsample of heavy drinking HIV+ MSM who participated in randomized clinical trial testing an intervention to reduce alcohol use (N=180) and completed survey items on ART-alcohol interaction beliefs at the initial study visit (n=69) or 12-month (n=110) follow-up.

Results: Approximately 28% and 35% of participants reported believing that ARTs were less effective with alcohol at baseline and 12-month follow-up, respectively. Those endorsing ART-alcohol interaction beliefs, compared to those who did not, did not report significantly more missed ART days or drinks consumed, but did report significantly worse depression. Those who reported intentionally skipping/stopping taking ART when drinking had poorer overall ART adherence at baseline (n=13, 19%), this relationship approached significance (t=3.37, d=1.24, p=.05). Those who endorsed ART-interaction beliefs, compared to those who did not, reported significantly more alcohol related problems at baseline (t=2.52, d=.77, p

Conclusions: Consistent with prior research about a quarter of our sample endorsed beliefs about reduced ART-effectiveness when drinking. The association between ART beliefs and adherence approached significance, and the association between ART beliefs, depression, and alcohol related problems was significant. This suggests ART beliefs and problematic alcohol use play a role in adherence for HIV+ MSM, but more research is needed to understand how these factors interact in this population.

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D114

10:00 AM-11:00 AM

INSIGHTS FROM THE TWITTERVERSE: A STUDY OF WHAT TWITTER USERS SAY, AND FROM WHERE THEY SAY IT, ABOUT PREP FOR HIV PREVENTION

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Background: Data from social media (e.g., Twitter) may be used to study the public's conversations about HIV prevention tools (e.g., pre-exposure prophylaxis (PrEP), or Truvada®). Truvada®, a HIV medication approved by the U.S. FDA to be used as PrEP in 2012, is a highly effective HIV prevention strategy for individuals at risk for HIV. Despite its demonstrated efficacy in clinical trials, PrEP implementation has been, and continues to be, challenging.

PrEP stigma -- or being stigmatized by others for using PrEP -- is a key barrier to PrEP uptake, adherence, and persistence. Studies show that peers who believe that PrEP will lead to increased sexual risk behavior and providers who are unwilling or hesitant to prescribe PrEP are key deterrents to individuals' use of PrEP. While PrEP stigma has demonstrated a negative impact on PrEP use, little is known about the prevalence of negativity toward PrEP and whether it varies by location.

Method: We sought to determine the prevalence and the content of Twitter conversations about PrEP in each U.S. state. We also examined whether there were associations between prevalence and content of geolocated PrEP tweets and state-level HIV prevalence rate.

Results: A total of $N=415$ geolocated tweets were collected using Twitter's Advanced Programming Interface (API) June-December 2017. The API collects tweets containing user-specified key words (e.g., PrEP, Truvada). We then used AIDSVu to determine most recent (2015) state-level HIV prevalence rate and IBM's Watson to code each tweet for sentiment and presence of fear, disgust, and joy toward PrEP.

Forty-four states (including D.C.) had \geq one tweet about PrEP. The states with the most tweets were D.C. ($n=79$ tweets, 19.03%), California ($n=76$, 18.31%), and New York ($n=49$, 11.81%). We found that tweet prevalence was positively associated with that state's HIV prevalence rate ($r = .593, p < .001$).

Sentiment toward PrEP was most positive in Washington state ($M=0.815$), Oregon ($M=.784$), and Maryland ($M=.648$), and most negative in Kentucky ($M=0.064$), North Carolina ($M=0.017$), and Nevada ($M=0.036$). Tweets' PrEP sentiment was negatively associated with state HIV prevalence ($r = -.186, p = .004$). The presence of the emotion *fear* in tweets was positively associated with state HIV prevalence ($r = .160, p = .013$), while the presence of the emotion *joy* was negatively associated with state HIV prevalence ($r = -.139, p = .030$). The association between the presence of the emotion *disgust* and state HIV prevalence was trending toward significance ($r = .119, p = .064$).

Conclusions: Eliminating PrEP stigma will require a multi-faceted approach wherein there is a ramping up of public education and marketing campaigns, both in face-to-face and social media formats. Areas with high HIV prevalence but where PrEP sentiment is relatively negative must be our first priority for these efforts.

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D116

10:00 AM-11:00 AM

INTERSECTIONALITY OF FACTORS ASSOCIATED WITH HIV RISK BEHAVIORS AMONG FORMERLY INCARCERATED BLACK DRUG OFFENDERS

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Purpose: In the United States, Black Americans are vastly overrepresented among individuals incarcerated for drug-related offences and account for the highest proportion of those with HIV. Post-incarceration, they reportedly engage in high risk behaviors, further complicating efforts to **successfully** transition to the community. The purpose of this study was to examine syndemic relationships that influence HIV risk behaviors among formerly incarcerated Black drug offenders.

Methods: Surveys and qualitative in-depth interviews ($N = 30$) were conducted with Black Americans charged with drug-related offenses and recently released (< 1 year) from prisons in the New York City area. Descriptive analysis was conducted on demographic characteristics. Qualitative data were coded and analyzed using Qualitative Comparative Analysis (QCA). QCA allowed for the exploration of causal contribution regarding different risk factors that lead to the engagement of high-risk sex.

Results: The majority of the participants were male (83%), experienced homelessness post-release (83%), never married (77%), identified as heterosexual (67%), and on parole or probation (60%). Among the participants, 23% were employed full-time, 43% used illicit drugs since release, 40% reported using alcohol or drugs before or during sex, 60% reported not using a condom during their last intercourse. Majority reported ever being physically attacked (80%) or experiencing emotional abuse (70%). QCA analysis revealed that syndemic relationships occurred between drug use, condomless sex, homelessness, underemployment and experienced violence.

Conclusion: Our results support findings of syndemic relationships between substance abuse, violence and HIV risk behaviors. In addition to risk behaviors associated with increasing vulnerability to HIV infection, participants in our study experienced stigma due to their criminal justice background that resulted in social marginalization and poverty. Formerly incarcerated Black drug offenders experience inter-correlated challenges after release from prison, thus multidisciplinary research approaches for HIV prevention programs that are multisectorial are needed to address broader social integration concerns.

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D117

10:00 AM-11:00 AM

NECESSITY AND CONCERNS BELIEFS AND HIV MEDICATION ADHERENCE: A SYSTEMATIC REVIEW

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Background: Adherence to antiretroviral medication regimens is crucial to reducing HIV transmission rates and extending longevity among people living with HIV. Adherence-promoting interventions often focus on fostering the self-regulatory skills necessary to overcome barriers to adherence. However, missed doses also occur when patients make a conscious decision not to take their medication. Past research confirms that beliefs about medication necessity (perceived need for the benefits of a medication) and medication concerns (evaluation of the perceived negative consequences of a medication) play an important role in determining medication-taking behaviors across a variety of chronic illnesses, including HIV. However, there has not been a focused review of the literature on associations of necessity and concerns beliefs to HIV medication adherence. Accordingly, we conducted a systematic review of the HIV literature to identify (a) effect sizes for associations of necessity and concerns to adherence, (b) factors that may influence these associations, and (c) methodological strengths and weaknesses of the current research base.

Methods: A total of 22 studies were included in the review that examined associations of necessity and concerns to HIV medication adherence based on the Necessity-Concerns Framework.

Results: Both necessity and concerns beliefs showed small, clinically significant effects on adherence. Provider perceptions emerged as a contextual influence directly associated with necessity and concerns and indirectly associated with adherence. Five studies provided initial evidence that the necessity-concerns differential, a simple indicator of the relative standing of necessity to concerns, may better explain adherence variability than independent analysis of either belief.

Conclusions: Overall, necessity and concerns demonstrated clinically significant associations to adherence among people with HIV. Future work can advance this literature by testing models based on the Necessity-Concerns Framework, improving measurement of adherence and medication beliefs, and assessing changes in beliefs and adherence over time.

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D118

10:00 AM-11:00 AM

NEUROPSYCHOLOGICAL FUNCTION IN HIV CLADE C INFECTED AND UNINFECTED INDIVIDUALS IN NORTHERN INDIA

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Objectives: India has 2.1 million people living with HIV Clade C. Previous studies of Clade B have identified cognitive decrement in early HIV infection, and poor functioning is linked with poor adherence to treatment. The impact of HIV Clade C on cognitive functioning has been understudied, and most cognitive assessment of those not on antiretroviral medication has been limited to Clade B. This preliminary study compared neuropsychological functioning between untreated HIV Clade C infected and uninfected individuals.

Methods: Participants (N=47) were men and women aged 22–44 years old in Northern India recruited from a large, public teaching hospital. Eligible participants had no history of major head injury, chronic or neurological illness, or addiction.

Results: Participant demographics did not differ by serostatus; 57% HIV positive, median age 28 (IQR 25–36), and 55% male. HIV infected participants had lower education ($p=0.009$) and income ($p=0.001$); CD4 count median 315 (range 60–876); participants were asymptomatic but reported lower self-perceived motor/sensory functioning ($p=.007$). Comparing those previously ($n=5$, 2012–2014) and newly diagnosed ($n=22$, 2016–2017) with HIV, those newly diagnosed were younger ($p=0.045$). HIV infected and uninfected participants did not differ on self-perceived memory, cognition and linguistic performance (all $p>.09$). HIV infected participants displayed poorer cognitive functioning and had lower scores on delayed recall/recognition ($p=0.005$), processing speed ($p=0.008$), and word/color STROOP tasks ($p=0.008$). Demographic variables and cognitive functioning were associated: age with processing speed ($r_s=-0.50$, $p_r_s=0.30$, $p=0.040$); education with processing speed ($r_s=0.71$, $p_r_s=0.59$, p

Conclusions: Preliminary results suggest that in this sample, decrements in cognitive performance may be attributable to HIV Clade C when contrasted with HIV uninfected individuals, while HIV patients may be unaware of such decrements. Findings have important implications for clinical intervention in newly diagnosed Clade C patients due to the potential impact of cognitive functioning on adherence.

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10:00 AM-11:00 AM

PRE-EXPOSURE PROPHYLAXIS TO PREVENT HIV TRANSMISSION FOR SERODISCORDANT COUPLES: PERSPECTIVES OF PEOPLE LIVING WITH HIV

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Pre-Exposure Prophylaxis (PrEP) for HIV-negative partners and antiretroviral therapy (ART) for infected partners can virtually eliminate HIV transmission risk for serodiscordant couples. Most efforts to promote PrEP uptake have focused on the HIV-negative partner's perspective with little consideration of the HIV-positive partner's attitudes and beliefs about PrEP. The current study provides descriptive data on attitudes towards PrEP among people living with HIV and examines the association of PrEP attitudes to risky health behaviors (i.e., <95% ART adherence and any instances of condomless sex). Participants ($N = 214$; M age = 46.5; 62% male) received information about the efficacy of PrEP and were asked to "imagine that you are in a relationship with a partner who is HIV-negative." Participants then responded to a questionnaire that assessed their attitudes towards PrEP. Despite the fact that 57% of the sample had not previously heard of PrEP, 81% reported that they would want their HIV-negative partner to be on PrEP. The majority of participants agreed that they would also facilitate PrEP uptake by talking to their partner (86%) and healthcare provider (72%) about starting their partner on PrEP and helping their partner to remember to take the medication daily (85%). Individuals also indicated that PrEP would make them feel more protected from transmitting HIV (79%) and a minority (38%) reported that they would use condoms less consistently if their partner was on PrEP. While positive attitudes about PrEP did not vary as a function of ART adherence, participants who reported recent condomless sex expressed greater interest in having their partner take PrEP, $t = -3.18$, $p = .002$, greater willingness to discuss PrEP with a healthcare provider, $t = -2.34$, $p = .02$, and greater perceived protection from HIV transmission with PrEP, $t = -2.07$, $p = .04$. Those with a history of sexual risk also indicated that they would continue to use condoms less consistently compared to participants reporting no recent unprotected sex, $t = -4.92$, $p < .001$. Overall, findings confirm greater interest in PrEP among HIV-positive partners with elevated sexual risk histories. Future research should consider how the implementation of PrEP may include HIV-positive sex partners to promote PrEP uptake and adherence, as well in interventions targeting behavioral risks (i.e., condomless sex) that may reduce the long-term effectiveness of PrEP.

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D120

10:00 AM-11:00 AM

TECHNOLOGY FOR ENGAGEMENT AND MANAGEMENT OF HEALTH (TEAMH) TO IMPROVE MEDICATION ADHERENCE FOR PERSONS WITH HIV: A PILOT STUDY.

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Background: Medication adherence issues remain a major barrier in the management of patients living with HIV/AIDS (PLWH).

Methods: This mixed-method pilot study evaluates the feasibility of a smartphone application and web-based medication adherence program, *Technology for Engagement And Management of Health (TEAMH)*, and its potential to impact patient adherence. TEAMH is an application designed to help manage the key aspects of patient care at home enabling users to: 1) track adherence to medications; 2) track medical appointments; and 3) to interact via a secure two-way messaging system between the patient and clinician (health coordinator). We held one focus group with all study participants at the end of the study period facilitated by an experienced qualitative researcher. Medication adherence measurements were based on reports generated by the TEAMH app which recorded overall medication compliance of patients enrolled in the pilot study. Adherence was calculated based on average of the number of pills reported to have been actually taken divided by the number of pill prescribed pills prescribed over the course of the number of functional days of app use. A system usability scale questionnaire, adapted from the mHIMMS App Usability work group, was administered to all patient participants and the health educator at the end of the one-month study period.

Results: Nine patients completed the study with 92% medication adherence. On average, these patients were 51.9 (SD 12.1) years old, 66% (n=6) were female, 34% (n=3) were White/non-Hispanic, 11% (n=1) were White/Hispanic and 33% (n=3) were Black/non-Hispanic. The average rate of medication adherence at the end of the study was 92% ranging from 78–100% adherence. Of total doses taken, 64% of medications were taken on time, 9% were missed and 27% were postponed by a mean of 11 (SD +/-7.7) minutes from the scheduled time. As part of the focus group, patient participants (n=9) were asked about the intervention feasibility and acceptability, and they were encouraged to discuss any barriers to using the technology that they encountered during the study period. Overall, the focus group indicated that participants were satisfied with the app and found it easy to use. They felt that it would be extremely beneficial for all patients, especially those struggling with ART adherence or who have to manage complicated medication regimens.

Conclusions: Data collected in this study demonstrated that TEAMH not only aided with medication adherence but was overall well received by the participants in the study. This pilot represented a first step toward the development of technology for engagement and adherence to treatment for PLWH. In addition, our TEAMH technology has the potential to be effective for use with other chronically ill patient populations.

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D121

10:00 AM-11:00 AM

THE USE OF A THERAPEUTIC INTERVIEWING AND IMAGE RE-SCRIPTING TO CATALYZE RESILIENCE IN AN INDIVIDUAL WITH HIV, A CASE STUDY.

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Resilience is known to be a significant attribute in the prevention of further psychological distress caused by trauma (Bonanno, 2005); however, there is a scarcity of qualitative research on how resilience interplays with patients who suffer from chronic health conditions (Cal, Sa, Glustak, & Santiago, 2015; Gooding, Hurst, Johnson, & Tarrier, 2012). The purpose of this instrumental case study is to understand resilience factors augmented by image rescripting-- the technique of bringing an image into verbal depiction, which is then rescripted in a strengths-based paradigm with an individual with HIV (Kirkham, Smith, & Havsteen-Franklin, 2015). I recruited a participant using referral sampling from personal sources and intensity sampling. Therapeutic intervention took place using image rescripting in a strengths-based therapeutic interview session. During the process of rescripting, the client identified personal systemic resilience elements. These systemic elements using a post-traumatic growth lens suggest that this participant has adapted to HIV over time. The participant was successful in integrating positive illusion into the construction of the self. Further, he externalized his HIV into a personified element of his systemic resilience network. I found that empowerment through the act of "doing" is prominent throughout this study, which suggests that individuals with HIV may benefit from active action in the form of "doing hope" or "doing empowerment" (Flaskas, 2007). This study contributes to the growing body of literature on HIV interventions, as well as provides evidence for the use of strengths-based therapeutic interviews in conjunction with image rescripting to catalyze resilience.

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D122

10:00 AM-11:00 AM

ASSESSING SUICIDAL IDEATION: THE ROLE OF ALCOHOL/SUBSTANCE USE DISORDERS AND CIGARETTE USE AMONG HIV+ INDIVIDUALS

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Objective: Substance use disorders (SUD), including alcohol use disorders (AUD), as well as cigarette use, are associated with an elevated risk for suicidal ideation (SI). It is often thought that depressive symptoms mediate this relationship; however, SI may occur without the presence of these symptoms. Exploring this relationship is especially prudent among HIV+ individuals, as they smoke and use substances at a higher rate. Additionally, HIV+ individuals endorse increased rates of depression and are three times more likely to attempt suicide compared to the general population. The present study sought to explore the relationship between substance use, including cigarettes, SI and depression among patients entering treatment in a medical clinic for HIV. It was hypothesized that patients with an AUD, SUD, or daily cigarette use would be more likely to endorse SI than non-substance using counterparts, even when controlling for depression.

Methods: Participants (n= 1,292) were primarily male (58.8%), African American (90%) patients entering treatment at an HIV clinic. AUD, SUD, depression, and SI status were assessed using the M.I.N.I. International Neuropsychiatric Interview. Daily cigarette use was assessed via self-report. A logistic regression was utilized to explore the relationships between substance use, SI, and depression.

Results: Daily cigarette use was reported by 42% of participants, and 18.2% reported symptoms of a current AUD or SUD. A total of 33.2% reported symptoms consistent with a current depressive disorder. Depression increased the odds of endorsing current SI (Odds Ratio 6.88, 95% CI, 4.75 – 9.96). As hypothesized, participants endorsing symptoms consistent with AUD and/or SUD were 1.60 times (95% Confidence Interval, 1.06 – 2.13) more likely to endorse SI, even when controlling for depression. Those endorsing daily cigarette use also demonstrated a higher likelihood (OR 1.49, 95% CI, 1.04 – 2.13) of endorsing SI, when controlling for depression.

Conclusion: Findings suggest that even when accounting for depression symptoms, AUD, SUD, and daily cigarette use are predictors of SI in a population seeking treatment for HIV. Results emphasize the need to not only screen for SI in patients with depression, but to also screen individuals with AUD, SUD, or daily cigarette use.

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D123

10:00 AM-11:00 AM

CORRELATES OF DUAL PROTECTION STRATEGY USE AMONG SOUTH AFRICAN ADOLESCENT GIRLS: A REVIEW AND CRITIQUE OF THE LITERATURE

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Background: Globally, South African (SA) adolescent girls experience some of the highest rates of both unintended pregnancies and STI/HIV. One-third of SA adolescent girls will be pregnant by age 20 and SA accounts for one-third of all new HIV infections among young women worldwide. To inform culturally-tailored interventions to reduce both unintended pregnancies and STI/HIV, there is a need to understand factors associated with the use of dual protection strategies (use of methods to prevent both pregnancy and STI/HIV) among SA adolescent girls.

Purpose: The purpose was to conduct a review and critique of studies examining correlates of condom, contraceptive, and dual protection use among SA adolescent girls.

Methods: Studies were included in the review if they met the following criteria: (a) the sample was comprised predominantly of SA adolescent girls between 15 to 24 years of age; and (b) the study reported on correlates of condom use, contraceptive use, and/or dual protection use. Searches of electronic databases were conducted with combinations of relevant search terms to identify studies included in the review. The review included 25 studies published between 2003 and 2016.

Results: The majority of studies utilized a cross-sectional design (72%) examining individual-level constructs (e.g., age, condom use self-efficacy) as key correlates. Condoms were the most frequently endorsed method used, with use of other contraceptive methods varying across studies, and dual protection infrequently endorsed (e.g., 7.5% among sexually active sample). Findings were mixed regarding correlates associated with condom, contraception, and/or dual protection use; however, strategy use often differed by sociodemographic variables (e.g., age, educational status), current relationship characteristics, and previous sexual behaviors (e.g., age at first sex).

Conclusions: There was a limited number of studies examining dual protection strategy use with the majority focusing exclusively on condom use. Individual-level factors (e.g., sociodemographic characteristics, HIV serostatus, etc.) were typically examined as correlates of condom, contraception, and/or dual protection use. While studies of individual-level factors facilitate understanding of personal decision making processes, there is a need to examine the broader cultural context that may influence SA adolescent girls' use of dual protection strategies to inform future multi-level intervention efforts.

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D124

10:00 AM-11:00 AM

INTERSECTING STIGMA: RACIAL DISCRIMINATION AND GAY REJECTION SENSITIVITY PREDICT MENTAL HEALTH AND SEXUAL RISK IN GBM OF COLOR

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Introduction: Although the CDC has identified social discrimination as a key risk factor causing gay and bisexual men (GBM) of color to have the highest rates of seroconversion, AIDS classifications, and deaths caused by HIV, there has been relatively little research examining how the constellation of social stigma facing these men affects their HIV risk. Minority stress and intersectionality theories together suggest that experiences associated with the intersection of multiple social identities, such as sexual orientation and race, can lead to negative mental health outcomes and, in turn, sexual risk. Thus, the present study investigates whether racial discrimination and gay-related rejection sensitivity individually and intersectionally predict sexual risk among GBM of color through their association with emotion dysregulation and negative mental health symptoms.

Methods: Participants were a community sample of 235 Latino, Black, and Multiracial GBM. We administered the Gay-Related Rejection Sensitivity Scale, the race version of the Everyday Discrimination Scale, and the Difficulties with Emotion Regulation Scale at baseline evaluation, the Brief Symptom Inventory at 6 months, and the Hypersexual Disorder Screening Inventory and Decisional Balance for Sex without Condoms scale at 12 months. We ran mediational structural equation models within *Mplus* 7.4 and tested mediational pathways using the Model Indirect command.

Results: Ninety seven percent of the sample reported non-zero gay-related rejection sensitivity and 85% of the sample reported experiencing racial discrimination. Racial discrimination ($\beta=.21, p<.01$), gay-related rejection sensitivity ($\beta=.17, p<.01$), and the interaction between them ($\beta=.16, p<.01$) significantly predicted emotion dysregulation. Simple slopes analyses showed that emotion dysregulation significantly increased at higher levels of both racial discrimination and gay-related rejection sensitivity. Emotion dysregulation ($\beta=.40, p<.01$) positively predicted later mental health symptoms which, in turn, predicted higher perceived benefits of condomless sex ($\beta=.28, p<.01$) and hypersexuality ($\beta=.40, p<.01$). There were significant indirect pathways from racial discrimination, gay-related rejection sensitivity, and the interaction term through emotion regulation and mental health to the two sexual risk outcomes.

Conclusion: This study indicates that the experience of both racial discrimination and gay-rejection sensitivity interact to put GBM of color at unique risk of emotion regulation difficulties, negative mental health symptoms and, in turn, risky sexual behavior. These results suggest that care providers and researchers must pursue comprehensive and intersectional intervention approaches to address the constellation of social stressors experienced by GBM of color.

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D125

10:00 AM-11:00 AM

LONGITUDINAL EFFECTS OF SYNDEMICS ON CONDOMLESS SEX WITH HIV-UNINFECTED PARTNERS AMONG SEXUAL MINORITY MEN LIVING WITH HIV

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Background. The relationship between syndemics, or co-occurring psychosocial problems associated with HIV sexual risk behaviors and HIV acquisition has been widely documented among HIV-negative sexual minority men. Comparatively, few studies have examined the link between syndemics and sexual health behaviors among those living with HIV. Men who have sex with men (MSM) remain the largest risk group for HIV in the U.S. Extending the work on syndemics to HIV-positive sexual minority men can inform the development of evidence-based secondary prevention programs, which may reduce HIV transmission.

Methods. This study was a one-year (5-time points) longitudinal analysis of the cumulative effects of syndemics on engaging in condomless anal sex (CAS) with HIV-uninfected partners among 390 HIV-positive MSM who participated in one of two prior secondary prevention trials. Participants were assessed for childhood sexual abuse, post-traumatic stress disorder, anxiety disorders, depression, alcohol abuse, and polysubstance/stimulant use. The number of psychosocial problems for which participants met criteria was used to compute their longitudinal syndemics scores (continuous, 0 – 6). Bivariate logistic regressions assessed co-occurrence among each of the psychosocial concerns. We employed multi-level modeling (SAS 9.4, PROC GLIMMIX) with participants’ syndemics scores at each time point as a longitudinal predictor of CAS with uninfected partners (binary). Control variables included time, intervention (or control) assignment, and their interaction.

Results. Bivariate logistic regression analyses with each individual syndemic condition regressed on the others showed seven significant associations ($p < .05$) and four approaching significance ($p < .10$). Multilevel modeling revealed that the number of syndemics for which participants met criteria over time significantly predicted CAS with uninfected partners, such that for each additional syndemic condition, participants had 1.41 increased odds of CAS (95% CI [1.16, 1.70], $p = 0.0004$).

Conclusions. This is the first study to the authors’ knowledge to show the longitudinal association between psychosocial syndemics and sexual risk among sexual minority men living with HIV. The findings highlight the importance of addressing co-occurring psychosocial concerns when developing and implementing secondary prevention and sexual health promotion programs for sexual minority men living with HIV.

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D126

10:00 AM-11:00 AM

PREDICTING SEXUAL BEHAVIORS AMONG HOMELESS YOUNG ADULTS USING ECOLOGICAL MOMENTARY ASSESSMENT: RESULTS OF PROJECT YOUTH EMA

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Introduction: Homeless youth continue to be disproportionately affected by HIV compared to their housed peers with prevalence rates as high as 13%. Yet, HIV prevention in this high-risk population has only been marginally effective.

Objective: The aim of this study was to determine whether EMA data can be used to develop a predictive model of sexual risk among homeless youth.

Methods: Homeless youth 18–24 years old were recruited from a drop-in center in Houston, TX between August, 2015 and May, 2016. All participants received a study-issued smartphone that prompted brief Ecological Momentary Assessments (EMAs) 5 times a day for 21 days. EMA items assessed near real-time sexual behaviors, cognitions, stress, affect, environmental factors, and environmental circumstances.

Results: Participants (N=66) were predominantly male (64%) and Black (66%) with a median age of 20 years old. The mean number of EMAs completed by each participant was 45 observations (i.e., 13 daily and 33.6 random EMAs). Of the 70% of participants who were sexually active during the study, condomless sex was reported in 102 incidences or 75% of sexual intercourse incidences. In total, 38 (58%) participants reported engaging in any high risk sexual behaviors within the data collection period including condomless sex (53%), having multiple sexual partners on the same day (26%), trading sex (16%), or sharing needles for injecting drugs (3%). Of those, 71% had engaged in more than one of the risk behaviors during the study. The predictive model was based on observations from 66 subjects over 811 days and included 137 cases of sexual intercourse and included sexual orientation, race, mental health, drug use, and sexual urge as predictors in the parsimonious GLMM selected on the basis of the Akaike information criterion (AIC). Youth who were LGBT, youth of color, or who had a mental illness had higher odds of sexual activity. For within subject factors, the estimated odds ratios were notable for same day drug use (OR = 2.17, $p < .001$) and sexual urge (OR = 1.44, $p < 0.01$). Performance of the risk estimator was satisfactory, as indicated by the value of 0.834 for the area under the ROC curve.

Conclusions: Real-time EMA data can be used to predict sexual intercourse among a sample of high risk, predominately unsheltered homeless youth. Sexual urge and drug use account for increased odds of engaging in sexual activity on any given day. Just-in-time interventions targeting sexual urge and drug use may help address high rates of HIV risk behaviors among this homeless youth

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D127

10:00 AM-11:00 AM

PREDICTORS OF PREP ADHERENCE AMONG A LARGE NATIONAL SAMPLE OF GAY, BISEXUAL, AND MEN WHO HAVE SEX WITH MEN

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Background: Pre-exposure prophylaxis (PrEP) is currently the most effective biomedical HIV prevention method available. Although the USFDA has approved PrEP for daily use among at-risk individuals, research has shown that adherence to 4 or more doses per week is the minimally effective dosing for the prevention of transmission. There has been competing evidence published on levels of adherence to PrEP, and one issue may be how adherence is captured. As such, we sought to provide further examination of the issue, examining both overall frequency of non-adherence and non-adherence for 4 or more days in a row.

Methods: Utilizing advertisements on a popular sexual networking app and a social networking website, we recruited 11,032 gay, bisexual, and men who have sex with men (GBMSM) to complete an online survey about sexual behavior, substance use, and PrEP. To examine predictors of frequency of missed doses we utilized a negative binomial regression; to examine missing 4 or more doses in a row, we utilized a binary logistic regression. In both models we included age, race, income, education, years on PrEP, any club drug use, any condomless anal sex with male casual partners (CAS), and AUDIT score.

Results: Significant predictors of frequency of missed doses in the last 3 months included income under 30K (ARR=1.76, $p=0.001$), club drug use in the last 3 months (ARR=1.26, $p=0.003$), and any engagement in condomless anal sex (CAS) acts with casual male partners (ARR=1.29, $p=0.004$). Significant predictors of the odds of missing 4 or more doses in a row in the last 30 days included younger in age (AOR=0.97, $p=0.003$) and having an income under 30K (AOR=1.88, $p=0.001$).

Conclusions: We found differences between predictors of individual's frequency of missed doses and missing 4 or more doses in a row; although there were many group differences in overall levels of adherence, few predictors emerged of missing sub-threshold levels of adherence that may undermine PrEP's effectiveness. Club drug use was significant for frequency of non-adherence but not those that missed 4 or more doses in a row, whereas alcohol use was not significant for either group. Post initiation can be costly (e.g. quarterly STI and HIV testing, prescription refills) and these findings suggest that interventions are needed to help HIV at-risk lower income individuals maintain a PrEP prescription.

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D128

10:00 AM-11:00 AM

PREP KNOWLEDGE AND USE AMONG MEN WHO HAVE SEX WITH MEN IN A SMALL METROPOLITAN REGION OF THE SOUTHEASTERN US

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Background. Men who have sex with men (MSM) continue to be at high risk of acquiring HIV, particularly those living in Southern US states. Pre-exposure prophylaxis (PrEP), an antiretroviral HIV prevention treatment, was approved by the US Food and Drug Administration in 2012. PrEP has become increasingly popular, although knowledge of this prevention strategy varies widely across communities.

Methods. The present survey study examined PrEP knowledge and use in a sample of 164 mostly White (70%), gay-identified (84%), HIV-negative (84%) adult MSM ($M_{age} = 36.16$, $SD = 13.97$) living in the Central Savannah River Area (CSRA) of the South.

Results. Results revealed that approximately one-fifth of the sample (19.5%) had never heard of PrEP, with approximately one-third (32.9%) reporting they are very familiar with PrEP. Approximately one-fifth of the sample (19.7%) had spoken to a healthcare provider about PrEP, with a slightly lower percentage (16.8%) reporting that a healthcare provider discussed PrEP with them. Just under one in ten MSM (9.1%) had previously taken PrEP. Factors associated with knowledge of PrEP include higher levels of education ($r = .22$, $p < .01$), gay identification ($r = .22$, $p < .01$), HIV-positive status ($r = .22$, $p < .01$), and history of healthcare provider discrimination ($r = .16$, $p < .05$). MSM of color were more than three times more likely than White MSM to have used PrEP (17% versus 4.7%; $\chi^2 = 5.55$, $p < .05$).

Conclusion. Although PrEP familiarity is high among MSM in this region, rates of discussion with healthcare providers and PrEP use remain low. Increased PrEP awareness and provision of appropriate and competent healthcare to MSM by providers is needed in order to effectively address the ongoing HIV epidemic among Southern MSM.

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D129

10:00 AM-11:00 AM

PSYCHOSOCIAL STRESSORS AND CD4 COUNT AMONG HIV-POSITIVE OLDER ADULTS: SUPPORT FOR A BIOPSYCHOSOCIAL MODEL OF HIV STIGMA & HEALTH

H. Jonathon Rendina, PhD, MPH¹, Laurel Weaver, MA², Jonathan López Matos, MA², Brett M. Millar, PhD³, Jeffrey T. Parsons, PhD⁴¹Hunter College of the City University of New York (CUNY), New York, NY;²Graduate Center of the City University of New York (CUNY), New York, NY;³Graduate Center CUNY, New York, NY; ⁴Hunter College - CUNY, New York, NY

Background: Available evidence suggests a link between psychosocial wellbeing, adherence, and immune function. For example, depression has been strongly linked to inflammatory processes and this has been shown among individuals with chronic illnesses such as HIV. We sought to explore how a range of psychosocial issues might influence immune health among older adults with HIV adjusting for known differences in adherence and virologic failure

Method: We enrolled 120 substance-using older adults, and utilized a multivariable linear regression predicting log CD4 cell count with depression, loneliness, social support, HIV stigma, alcohol use problems, and drug use problems, adjusting for gender, race, income, age, years since HIV diagnosis, medication adherence, and undetectable viral load.

Results: The sample was two-thirds male ($n = 81$, 67.5%) and the majority were people of color ($n = 111$, 92.5%). The average age was 54.6 ($SD = 4.1$) and participants had been living with HIV for an average of 17.1 years ($SD = 6.9$). In the adjusted multivariable models, we found that HIV stigma was the only significant psychosocial predictor of CD4 count ($\beta = -0.27$, $p = 0.02$)—depression, loneliness, social support, alcohol use problems, and drug use problems were all non-significant.

Conclusions: In adjusted models, HIV stigma was the only psychosocial condition to show a statistically significant association with CD4 count, such that increased levels of stigma were associated with decreased CD4 count (i.e., poorer immune health). This was true even after adjusting for factors such as medication adherence and undetectable viral load. This study provides evidence that HIV stigma is a critical psychosocial factor influencing the immune health of HIV-positive older adults. Interventions with this population should focus on reducing stigma. Future research should examine the interrelation among these psychosocial conditions and how they may interact in their association with health.

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D130

10:00 AM-11:00 AM

PSYCHOSOCIAL SYNDEMICS AMONG HIV-POSITIVE PEOPLE WHO INJECT DRUGS IN RUSSIA

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Background: Psychosocial problems including substance use, violence, and depression co-occur and form a “syndemic” among key at-risk populations for HIV. Research on the syndemic framework has shown that individuals with a higher syndemic load, or a greater number of problems, are more likely to engage in risky sex. Most of the extant evidence has been found among men who have sex with men, HIV-negative, and U.S. populations with a focus on behavioral outcomes. Much less research has examined syndemic load among HIV-positive populations and clinical outcomes, especially among non-U.S. populations. The HIV epidemic in Russia is expanding, greatly affecting people who inject drugs (PWID), and would benefit from examination on this topic in this context.

Purpose: Our primary aim was to test whether syndemic load (i.e., sum of psychosocial problems) is associated with lower CD4 count (primary outcome), more HIV symptoms, lower perceived access to care and health literacy among HIV-positive PWID in Russia.

Method: This analysis examined data at the 6-month interview from the LINC RCT testing an intervention to improve HIV care outcomes among HIV-positive PWID in Russia. Participants completed measures of sociodemographics, syndemic problems (depressive symptoms, experience with violence, alcohol, and drug use), and other variables via face-to-face interviews with trained research staff. CD4 count testing occurred at baseline.

Results: Among 230 study participants, multivariable linear regression analyses showed that after controlling for sociodemographic covariates (age, gender, education, resource stability), there was a non-significant pattern such that compared to PWID with 0 or 1 problems ($N=61$, Adj. mean CD4 = 471.7), those with 2 ($N=66$, Adj. Mean = 415.8, $p=0.20$), 3 ($N=52$, Adj. Mean = 385.0, $p = 0.07$), or 4 problems had lower CD4 counts ($N=51$, Adj. Mean = 382.4, $p = 0.08$). A statistically significant association was found between higher syndemic loads (3 or 4) and more HIV symptoms. Depression and drug use also appeared to be associated with HIV symptoms. Syndemic load was not significantly associated with perceived access to care or health literacy.

Conclusion: Findings demonstrate the association between syndemic load and physical health among HIV-positive PWID in Russia, and extends prior findings that HIV prevention and care interventions with key populations should be multi-faceted to address multiple psychosocial problems.

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D131

10:00 AM-11:00 AM

PSYCHOSOCIAL SYNDemics AND BARRIERS TO HIV CARE AMONG OUT-OF-CARE HIV-POSITIVE INDIVIDUALS IN TIJUANA, MEXICO

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Background: An understanding of the barriers to HIV care among HIV-positive marginalized and hard-to-reach populations is necessary to achieve the promises of “Treatment as Prevention.” Psychosocial problems including substance use, childhood sexual abuse, and depression co-occur and form a “syndemic” among key at-risk populations for HIV. Whereas a great deal of evidence has shown that syndemic load (number of psychosocial problems) is associated with higher risk behavior among HIV-negative populations, less is known about the role of syndemics in barriers to care among people living with HIV. In Tijuana, Mexico, the HIV epidemic is concentrated among female sex workers (FSW), people who inject drugs (PWID), and men who have sex with men (MSM). Previous research has shown that members of these populations in this region are not linked to or retained in HIV care and very few are virally suppressed.

Purpose: The aims of the current study are to examine syndemic psychosocial problems among out-of-care HIV-positive FSW, PWID, and MSM in Tijuana, and to test whether syndemic load is associated with barriers to HIV care. We hypothesized that participants with higher syndemic load would report a greater number of barriers to HIV care.

Method: Out-of-care HIV-positive FSW, PWID, and MSM in Tijuana, Mexico ($n=54$) completed a survey assessing sociodemographics, syndemic problems (depression, recent drug use, hazardous alcohol use, childhood abuse, and recent experiences with violence victimization), and barriers to HIV care.

Results: Multivariable linear regression analyses showed that after controlling for sociodemographic covariates (age, housing instability, food insecurity), syndemic load was a significant and positive predictor of barriers to HIV care ($B = 0.59$, $t = 2.11$, $p = 0.04$). Syndemic load was specifically associated with reporting not having transportation to HIV care ($OR = 1.90$, $p = 0.02$), being unable to pay for travel to HIV care ($OR = 2.79$, $p =$

Conclusion: Members of key HIV-positive populations (FSW, PWID, MSM) in Tijuana, Mexico who experience more psychosocial problems report more barriers to care. Primary barriers may have to do with transportation and internalized stigma or depression. Interventions to improve linkage to and retention in HIV care with these populations should focus on addressing these barriers.

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D132

10:00 AM-11:00 AM

REACHING THE COMMUNITY: HIV RISK AMONG AFRICAN AMERICAN CHURCH AND COMMUNITY MEMBERS

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Background: The rate of new HIV infections among African Americans (AAs) is eight times that of Non-Hispanic Whites. AAs report more frequent church attendance than any other racial/ethnic group, and faith-based HIV prevention interventions have demonstrated potential among AA church members and community members who use church outreach ministries (e.g., food pantry, daycare, counseling). However, few studies have examined whether AAs community members who use church outreach services are a greater risk for HIV compared to AA church members.

Methods: The current study examined HIV risk behaviors (e.g., sexual activity, drug use, correctional system history) using baseline data from Taking it to the Pews (TIPS), a faith-based HIV/STD screening and education intervention. Participants were recruited from 14 AA churches in the Kansas City metropolitan area. Binary logistic regression was used to examine participants' engagement in 10 HIV risk behaviors within their lifetime and over the past 12 months.

Results: Among church ($n = 1,021$, 68%) and community members ($n = 479$, 32%), participants were primarily female (68%) and had an average age of 43 ($SD = 13$). Preliminary analyses indicated associations between nine of the ten behaviors at both lifetime and over the past 12 months. In their lifetimes, community members were at greater risk than church members for injecting street drugs ($OR = 3.4$, $p < .001$), sharing needles ($OR = 4.4$, $p = .001$), having been to alcohol or drug treatment ($OR = 2.5$, $p < .001$), having been homeless ($OR = 2.14$, $p < .001$), having been in the correctional system ($OR = 2.5$, $p < .001$), having sex while high on drugs or alcohol ($OR = 1.37$, $p = .008$), and having sex with someone who has been in prison ($OR = 1.4$, $p = .01$) or injects drugs ($OR = 2.4$, $p < .001$) or a man who has sex with men ($OR = 2.2$, $p = .02$). These findings also held over the past 12 months, with the exception of having sex with a man who has sex with men. Community members were also at greater risk for being the victim of domestic violence or abuse over the last 12 months ($OR = 1.8$, $p < .001$).

Conclusions: Findings indicate that AA community members who used church outreach services were more likely to endorse risk behaviors (e.g., drug use, homelessness) and therefore, may be at greater risk for HIV than AA church members. By tapping existing church outreach networks, faith-based HIV prevention interventions may have the potential to increase their reach. Furthermore, HIV prevention programs implemented in church settings should consider targeted recruitment of AA community members who use outreach ministries, in order to more effectively focus HIV prevention efforts for members of the AA community who may be at greater risk for HIV.

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D133

10:00 AM-11:00 AM

REDUCING UNDIAGNOSED HIV INFECTIONS: UNDERSTANDING GENDER DIFFERENCES IN HIV TEST BEHAVIOR OF YOUNG AFRICAN AMERICAN ADULTS

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PURPOSE/OBJECTIVES: Over 50% of young adult ages 18–24 who are HIV positive, are unaware they are infected with HIV. African Americans represent the racial/ethnic with the highest burden of HIV, accounting for 45% of HIV infections in the United States. Despite these statistics, little research has been dedicated to understanding factors that increase the likelihood of HIV testing among Black/African American young adults. Getting tested for HIV is the only way to know one's status. The primary aim of this study was to examine gender differences in predictors of past HIV test behavior in this population.

PARTICIPANTS/METHOD: Data from (n = 142) young adults participating in an evidenced-based safer sex behavioral intervention were collected. Participants self-identified as Black/African American, and most were between the ages of 18 and 26. They completed a questionnaire with measures of sexual behaviors, HIV testing attitudes, and HIV test behaviors, among other measures. A series of chi-square tests of associations and independent samples t-test were performed to assess gender differences in past HIV testing, HIV test attitudes, HIV knowledge, HIV test behavior, and HIV risk behaviors. Following these tests, multivariate regressions examined the relation between both HIV test attitudes and knowledge of where to get tested, with having previously been tested for HIV.

RESULTS: Overall, 58% percent had been previously tested for HIV. Predictors of past HIV testing differed by gender. Negative attitudes about HIV testing were associated with a significantly lower likelihood of past HIV testing among men, but not this was not a significant predictor of past HIV testing among women. Knowledge of where to get tested was significantly associated with a greater likelihood of past HIV testing among women, but not among men. There were significant differences between groups on number of sexual partners and HIV testing attitudes, such that men reported a significantly higher number of sexual partners in the past 3 months and more negative HIV testing attitudes compared to women. There were no significant differences between groups in recent engagement in unprotected sex, knowledge of where to go to talk to a health professional about HIV/STDs, or past HIV test behavior.

CONCLUSIONS: Understanding gender differences in predictors of HIV testing can provide important information about barriers/motivators to get tested for HIV. This information can be utilized to improve the effectiveness of HIV prevention efforts/strategies aiming to increase HIV testing among Black young adults. Findings from this study may be relevant to infectious disease clinicians and health care providers, HIV test counselors, and HIV behavioral interventionists working to increase rates of HIV testing among young Black/African American adults.

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D134

10:00 AM-11:00 AM

RESULTS OF A RCT OF SOCIAL MEDIA (WECHAT) BASED INTERVENTION TO IMPROVE MEDICATION ADHERENCE IN PEOPLE LIVING WITH HIV/AIDS

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OBJECTIVE: Adherence to medication adherence is critical to optimal disease management and quality of life for people living with HIV/AIDS (PLWHA). Effective interventions that can reach a large number of PLWHA in a cost-effective manner is urgently needed, especially in developing countries such as China where healthcare resources are limited. This study reports the results from a pilot mHealth intervention aimed to improve medication adherence and quality of life among PLWHA in China.

METHODS: Based on formative research, we developed an intervention program on WeChat, a popular Chinese social media mobile app with more than 900 million active users. A sample of 62 PLWHA was recruited from the infectious Department for HIV/AIDS treatment of a large hospital in South China. Participants were randomly assigned to intervention or control group. The intervention group (n=31) received information and reminders on medication adherence, physical exercise reminders, and HIV-related information three times a week on WeChat for 3 months. The control group (n=31) received nutrition information at the same frequency on WeChat.

RESULTS: Three months after the intervention, 86% (n=53) of the participants completed a follow-up survey. The mean age the participants was 28 years, 90% were male. Many of the participants were young men who have sex with men (MSM). The key outcomes of medication adherence and quality life did not improve significantly in the either groups; no statistically significant difference existed in the pre-post differences between intervention group and control group either. The minimal efficacy might be due to the small sample size and high ceiling effect of the primary outcomes (>90% in the baseline). We conducted qualitative interviews with the participants for their comments on the current intervention and recommendations for revision. The critiques included high-level interest in nutrition for PLWHA in control group and low-level interest in HIV-related information in the intervention group. Most participants had subscribed many WeChat accounts and did not read all the messages we sent.

CONCLUSIONS: The current study represents one of the first WeChat-based interventions for PLWHA, and it had a low level of efficacy. Future mHealth interventions need to identify the true needs of the target population and develop culturally appropriate programs delivered via user-preferred channels.

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D135

10:00 AM-11:00 AM

THE IMPACT OF GENERAL STRESS AND HIV-RELATED STRESS ON DEPRESSION AND ANXIETY AMONG HIV-POSITIVE GAY AND BISEXUAL MEN

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Background: General life stress and HIV-related stress have been independently associated with negative mental health outcomes, including anxiety and depression. For HIV-positive gay and bisexual men (GBM), these two forms of stress may have concurrent effects that independently exacerbate symptoms of anxiety and depression. The present study sought to simultaneously examine the impact of general and HIV-related stress on depression and anxiety in a sample of HIV-positive GBM.

Methods: Data were taken from a sample of 85 HIV-positive GBM from New York City. The Perceived Stress Scale (PSS) was used to measure general life stressors and the HIV/AIDS Stress Scale (HASS) was used to measure HIV-specific stressors. Anxiety and Depression were assessed using the Overall Anxiety Severity & Impairment Scale and the Overall Depression Severity & Impairment Scale.

Results: Average age was 39.1 years ($SD=10.4$), the majority of the sample identified as men of color (41.2% Black, 27.1% Latino, 20.0% White, 11.8% Other), 27.5% had a college degree or more, 88.2% were employed, 35.3% made more than \$30,000 a year, and 28.2% were in a relationship; the sample had been living with HIV for an average of 11.4 years. In bivariate analysis, PSS showed positive correlations with HASS ($r=.59, p<.01$), anxiety ($r=.71, p<.01$) and depression ($r=.69, p<.01$); HASS was significantly correlated with anxiety ($r=.61, p<.01$) and depression ($r=.46, p<.01$). After adjusting for sociodemographic differences and one another, PSS ($\beta=.52, p<.001$) and HASS ($\beta=.25, p<.05$) were both independently associated with overall anxiety. PSS was also associated to overall depression ($\beta=.65, p<.001$), but HASS did not maintain a significant independent association with depression ($\beta=-.03, p=.79$).

Conclusions: These findings support an association between two sources of stress and negative mental health outcomes among HIV-positive GBM. Further, these findings support the hypothesis that simultaneous sources of stress and different types of stressors may have unique impacts on mental health, with both general and HIV-specific stressors independently impacting symptoms of anxiety. Interventions targeting stress reduction as a means to improve mental health outcomes may need to consider incorporating specific techniques for dealing with HIV-related stigma.

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D136

10:00 AM-11:00 AM

THE ROLE OF INFORMATION AVOIDANCE IN CONTEMPORANEOUS HIV TESTING DECISION MAKING

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HIV testing is treated as the first step towards HIV prevention. However, there are significant psychological barriers to testing uptake. Even with improved HIV testing technology that can deliver accurate results in a matter of minutes, 1 in 8 people living with HIV are still unaware of their positive status (CDC, 2015). Washington, D.C. is one of the areas hardest hit by HIV in the United States, with rates of prevalence higher than some developing countries. In D.C., approximately 2.5% of the population is living with HIV, which exceeds UNAIDS' definition of a "generalized" epidemic (D.C Department of Health, 2014). With the HIV testing gap still a pressing issue, we sought to pinpoint psychosocial factors that might affect testing.

This study examined a four psychosocial factor model of HIV testing decisions among DC residents at risk for HIV. Three of the psychosocial factors, HIV stigma, HIV treatment optimism, and HIV infectiousness beliefs, have been well documented in the literature on HIV testing. However, the fourth psychosocial factor, the tendency to avoid threatening information, has received less attention in relation to HIV testing. The present study investigated how these factors impact contemporaneous HIV testing behaviors in a diverse sample of at-risk DC residents.

Surveys were collected from 130 at-risk DC residents during mobile HIV testing events held during the months of August 2016-December 2016. Participants were asked if they would like to take an HIV test. Those who refused the HIV test were immediately asked if they would like to take the survey for a \$5 Starbucks gift card. Participants who turned down the HIV test, reported being sexually active, and had not been tested in the last 4 months were retained for analyses. This group was compared to those who accepted the HIV test and then took the survey upon receiving a negative result.

A multivariate logistic regression predicting HIV testing group (turned down testing, accepted testing) revealed that the only significant psychosocial predictor of accepting an HIV test was information avoidance. Interestingly, those who reported greater information avoidance tendencies were more likely to accept HIV testing when offered, OR 1.15, 95% CI [1.03–1.28].

Overall, our results indicate that an important mechanism has been missing from the study of psychosocial barriers to HIV-testing. Information avoidance predicts HIV-testing behavior above and beyond the psychosocial factors that have previously been considered the primary deterrents of testing. However, our results indicated the opposite effects than what we predicted. Further examination of information avoidance and how it functions in relation to HIV testing decisions is warranted for understanding why at-risk populations choose not to test for HIV and which psychological mechanisms should be targeted for intervention.

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D137

10:00 AM-11:00 AM

TRANSGENDER WOMEN'S ALCOHOL USE AND HIV HIGH-RISK BEHAVIORS IN THE DOMINICAN REPUBLIC

Kristine Ria Hearld, PhD¹, Henna Budhwani, PhD, MPH¹, Rosa Mayra Rodriguez-Lauzurique, MSc², Robert A. Paulino Ramirez, MD, HIVS, DTM&H²¹University of Alabama at Birmingham, Birmingham, AL; ²Universidad Iberoamericana, Santo Domingo, Distrito Nacional, Dominican Republic

Background: Studies on alcohol use in transgender populations, particularly those in global resource-limited settings are scarce. This is particularly alarming, since alcohol use may be both a facilitator of HIV risk behaviors and a coping mechanism used after the engagement in such activities. Thus, we examined the relationships between high-risk sexual practices and alcohol use in a national sample of transgender women from the Dominican Republic.

Methods: Data for this study was from the 2015 Dominican Republic Transgender Health Needs Study (THNS), collected by Centro de Orientación e Investigación Integral (COIN), and funded by the National Council for HIV and AIDS (CONAVIHSIDA) representing the Dominican Republic Ministry of Health. As recommended by the Joint United Nations Programme on HIV/AIDS (UNAIDS), this study leveraged the PLACE method of data collection. Bivariate analysis examined differences between routine alcohol users and abstainers (n=291). Multivariate analyses reported odds ratios with alcohol use during sexual activity as the outcome (n=245).

Results: About half of respondents (49.5%) had sex under the influence of alcohol in the last 30 days, and 37.1% reported income from sex work. Bivariate tests found significant differences between alcohol users and abstainers. Sex workers (defined as reporting primary or secondary income through sex work), respondents who engaged in high risk sexual behaviors, those who used condoms less frequently, and respondents reporting higher numbers of sexual partners were all more likely to consume alcohol regularly as compared to their peers (p

Conclusions: Significant knowledge gaps persist in the behaviors of transgender women in resource-limited settings, especially in the Spanish speaking Caribbean. Although cross-sectional data cannot offer causal inferences, the associations between alcohol use and sex work in the transgender women from our national sample is particularly alarming, since alcohol consumption has been well-documented as an associate of engagement in high-risk for HIV sexual behaviors. Furthermore, transgender women are stigmatized in the Dominican Republic, potentially limiting their work opportunities. Anti-discrimination laws to exist that protect workers, but those policies are not consistently enforced potentially forcing transgender women to seek work in alternative settings. Further research on if alcohol enables the entry into sex work, if it reduces psychosocial effects of being a sex worker, or both is necessary to develop culturally appropriate, effective harm-reduction strategies for transgender women in the Dominican Republic.

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D138

10:00 AM-11:00 AM

BARRIERS AND FACILITATORS OF IMPLEMENTING PEER SUPPORT IN VHA PRIMARY CARE-MENTAL HEALTH INTEGRATION SETTINGS

Robyn L. Shepardson, PhD

VA Center for Integrated Healthcare, Syracuse, NY

In the Veterans Health Administration (VHA), over 1,100 Peer Support Specialists (PSS) promote recovery-oriented care. Peer support was historically delivered in VHA specialty mental health, but is now being piloted in Primary Care-Mental Health Integration (PC-MHI) settings. Research has shown the importance of consulting with key stakeholders when implementing peer support in new settings. Therefore, we conducted a qualitative study to identify barriers and facilitators to implementation of peer support in VHA PC-MHI. We conducted semi-structured interviews with 25 stakeholders (56% female): 7 PSS, 6 PC providers, 6 PC-MHI providers, and 6 PSS supervisors. Data were analyzed via conventional content analysis with inductive coding. Two authors independently coded all responses (kappas .62-.75) and resolved discrepancies through consensus. The most common barriers were: program functioning (educating staff about peer support, establishing workflow/referral processes), administrative support (lack of: funding, office space, training, appropriate supervision, local autonomy), role clarity (guidance on PSS role/scope of practice), and stakeholder buy-in (patients, PC staff, leadership). Key facilitators of initializing and maintaining peer support were similar, with administrative support (logistical resources; local autonomy; funding, clinical supervision, training, professional development, and peer networks for PSS) as a central focus. Program functioning (staff education, workflow/referral processes, tailoring program to local needs, feedback loops) and team cohesion (support/respect for PSS, open communication, PSS in team meetings) were also identified as important. Stakeholder buy-in, which could be obtained via staff education, shadowing, testimonials, demonstrating immediate impact, was most important initially. Access and visibility of PSS (to PC staff and patients) and evidence of success (improved patient outcomes) were additional unique initial and maintenance supports, respectively. For leadership support, stakeholder buy-in and administrative support (funding, communication, supervision, local autonomy) were most discussed. These findings can help inform future implementation of peer support in VHA PC-MHI settings. Specifically, local leadership and staff should collaborate to delineate the PSS role, establish workflows, ensure PSS inclusion in teams, and obtain staff buy-in to facilitate successful implementation. Administrative support spanning logistical, financial, and supervisory resources is essential for both establishing and maintaining programs.

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D139

10:00 AM-11:00 AM

DEFINING INTEGRATED BEHAVIORAL HEALTH CORE PRINCIPLES AND TASKS IN PRIMARY CARE

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Introduction: Different models of integrated behavioral health have been studied and utilized across primary care practices, but no unifying set of integrated behavioral health (IBH) elements in primary care (PC) exists to guide implementation, dissemination, and measurement. PC needs these elements defined to build and refine IBH in practice.

Objective: We convened a national panel of IBH leading experts to define the core principles and tasks of IBH.

Methods: A small group of nine integrated behavioral health national experts evaluated an initial set of IBH core elements (i.e., principles and tasks), drawing from several well documented models. A REDCap survey was used to empirically and qualitatively evaluate each core principle and task with 31 national stakeholders. Results from the survey were then used to guide a focus group of 23 national stakeholders to refine task definitions to ensure each task uniquely described IBH.

Results: Seven core IBH principles were defined with 2–9 affiliated core tasks, for a total of 34 tasks. Survey responses ($N = 31$, 84% response rate) resulted in high endorsement of all the tasks with rating options that included 1 = strongly no to 4 = strongly yes ($M = 3.42\text{--}3.50/4.00$, $SD = 0.70\text{--}0.92$), with 35% of the tasks endorsed by 100% of the respondents and a low occurrence of non-endorsements (3–14% of respondents across 65% of the tasks). A pervasive theme included the need to separate tasks related to good primary care from good IBH primary care and drove the focus group activity. The five final IBH principles included patient-centric care, treatment to target, use evidence-based behavioral treatments, population-based care, and conducting efficient team care.

Discussion: Overall, strong expert consensus guided the definition of IBH core principles and tasks, with some dissent among members particularly with “treat to target” tasks. While the tasks have not been tested in real practice settings, the Integrated Behavioral Health Primary Care pragmatic trial team is planning to adapt them to the intervention and metrics. Initial crosswalks are showing good concordance with the Practice Integration Profile survey and NCQA Patient-Centered Medical Home and Behavioral Health Distinction core competencies, demonstrating promise for refining metrics for IBH as well. Our IBH principles and tasks can be used to promote IBH dissemination, quality measurement, and value based payment models.

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10:00 AM-11:00 AM

PEER SUPPORT FOR DIABETES SELF-MANAGEMENT IN SHANGHAI COMMUNITY HEALTH CENTERS

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Background: Substantial research shows that peer support is effective in diabetes management, but integrating peer support into primary care continues to be a challenge. The Shanghai Integration Model (SIM) coordinates primary care in Community Health Centers (CHCs) with hospital-based specialty care. A key component of this healthcare transformation is the deployment of volunteer peer coaches to promote patient engagement in integrated care and daily self management. This presentation reports on the development and initial implementation of a CHC-based peer coaching program for adults with type 2 diabetes in Shanghai.

Method: Structured interviews with 15 CHC staff and patients with diabetes prior to implementation and a focus group with CHC staff members 2 months into the intervention provided insights into implementation progress and challenges. Using a stepped wedge study design, 10 CHCs were randomized into 3 cohorts with a 6-month delay in implementation.

Results: CHC staff and patients with diabetes recognized that peer support could contribute to the following needs for diabetes care in CHCs, including: 1) promoting self management behaviors, 2) improving knowledge about medication use and healthy diet, 3) reducing psychosocial and diabetes distress, 4) sustaining physical activity, and 5) reducing barriers to insulin initiation and treatment adherence. The formative evaluation informed the development of a program plan that includes: 1) regular, theme-based group meetings led by staff or co-led with peer coaches, 2) individual follow-ups by telephone, home visits, and WeChat, and 3) neighborhood-based group activities. In February 2017, 66 coaches and 25 staff from 10 CHCs received the initial training. In the following month, the CHCs recruited a total of 1192 patients with diabetes and 4 CHCs in the first cohort commenced the program. Ongoing technical assistance for CHC staff is provided through monthly conference calls and social media (WeChat) discussions. After 5 months, the 4 sites had held an average of 3.5 group sessions. Following a second training in August 2017, 3 additional CHCs commenced program implementation. One CHC withdrew from the project.

Discussion: Group and individual peer coaching through CHCs is proving to be feasible in “real world” settings of Shanghai's CHCs. Peer coaches are highly motivated to work with patients in the community and serve as mentors and inspirations to new coaches. In CHCs that have allocated additional staff time to the project, group activities have been organized on a regular basis and peer coaches are empowered to work closely with patients on specific diabetes self management goals. These initial success stories provide a model for successful implementation in later cohorts and wider dissemination to CHCs across Shanghai.

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UNDERSTANDING AND OVERCOMING BARRIERS TO IMPLEMENTATION OF PEER SUPPORT MODELS IN PRIMARY CARE

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The potential benefits of peer support for diabetes and other chronic illnesses are well described in the literature. However, numerous challenges exist related to the operationalization and implementation of peer support in primary care. In this presentation, we discuss barriers to implementation based on experience with two separate projects. In the first project, an urban safety net clinic is partnered with a local non-profit providing community health worker services to deliver peer support to patients with diabetes. The project aims to promote ambulatory care and reduce acute care utilization; multiple emergency room visits and hospitalizations with high risk for readmission trigger referral for community health worker (CHW) services. The second project is an ongoing four-arm randomized controlled trial to improve blood pressure control in the rural south; two arms include peer coaching as part of the intervention. Rural primary care clinics are recruited and randomized into one of the four arms. For those randomized to a peer coaching arm, trained peer coaches work with eligible patients to provide support for self-management of uncontrolled hypertension. We conducted qualitative interviews with primary care providers and focus groups with CHWs. Providers saw the value of CHW services, especially provision of peer support and education beyond the walls of the clinic; they had concerns about CHW limitations and overstepping scope of work, integration with the health care team, and cost. CHWs, all employed by community based organizations outside the clinic, did not feel comfortable interfacing with the clinic staff and had varied comfort levels with technology-based tools to interface with the care team. Strategies to overcome these barriers included increased PCP education regarding CHW services, building discussion groups with practice champions into CHW training, and identifying sustainable sources of funding. We present lessons learned from each project as well as strategies to overcome barriers and enhance program sustainability.

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BHOP FIRST STOP: MAKING PRIMARY CARE THE “FIRST STOP” FOR MENTAL HEALTH CARE IN THE USAF

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Background: A pilot study conducted at three USAF military treatment facilities (MTFs) from fiscal year (FY) 2014 to FY 2015 examined the effects of shifting the access point for mental health care from the base mental health clinics (MHCs) to the primary care behavioral health clinic (referred to as Behavioral Health Optimization Program or “BHOP” in the USAF). Pilot study results indicated that the BHOP service at pilot study sites experienced close to a 50% (48.9%) increase in the number of unique patients, and close to 56% (55.7%) increase in the number of patient encounters, compared to FY 2014 numbers. Additionally, MHCs at pilot study sites experienced nearly a 15% (14.8%) decrease in the number of unique patients, and nearly a 12% (11.8%) decrease in patient encounters, compared to FY 2014 numbers. Data from 2016 and 2017 indicated a continuation of promising results.

Objectives: Given the promising results across the pilot sites, one of the aims of this project was to examine the impact of the “First Stop” initiative for behavioral health services. An additional goal was to examine changes in BHOP and MHC utilization (number of unique patients seen, number of patient-encounters) prior to, and since, the pilot study.

Methods: We polled leaders of our Air Force Mental Health Clinics to get an idea of how many MTFs have begun taking steps to implement “First Stop.” We also reviewed annual data from FY 2014 – FY 2017 to examine the number of unique patients seen, and number of patient encounters, in the MHC and BHOP service across the three pilot sites.

Results: A poll of Air Force MHC leaders revealed that about 40% of MTFs have begun implementing “First Stop” at least to a limited degree. Across the three pilot sites, annual data revealed a 1.8 times increase in unique patients seen in BHOP, a 2.04 times increase in patient encounters seen in BHOP, and a 1.13 times decrease in the number of unique patients seen in MHCs since FY 2014. The average number of encounters per patient remained stable in BHOP but increased in pilot study MHCs since 2014.

Conclusions: Results suggest that increased efforts are being made across the USAF to make primary care the “First Stop” for behavioral health services. At the three sites examined during the initial pilot study findings also indicate higher utilization of BHOP services, and a decrease in the number of patients seen in MHCs. Findings also suggest that MHC patients are seen for more sessions than prior to the pilot study. This latter finding is consistent with expectations, since one goal of the First Stop initiative is to manage low acuity patients in primary care and to vector higher acuity patients requiring a higher level of care to the specialty mental health clinics.

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PRIMARY CARE PHYSICIANS' CONFIDENCE IN AND DELIVERY OF HEALTH BEHAVIOR CHANGE INTERVENTIONS

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Objectives: About one-third of the variance in health outcomes is attributable to modifiable healthy lifestyle behaviors, such as physical activity, eating habits, sleep, medication adherence, smoking cessation, and alcohol reduction. Primary care physicians (PCPs) are uniquely positioned to address health behavior change (HBC). However, little is known about PCPs' confidence in helping patients modify their behavior nor the specific strategies physicians employ to do so. This study aims to examine HBC techniques PCPs use with their patients.

Method: Family medicine resident and faculty physicians ($N = 28$; 64% female; 56% residents) completed an online survey regarding the frequency of use, confidence in, and perceived efficacy of HBC interventions for 6 behaviors (physical activity, eating habits, sleep, medication adherence, smoking cessation, and alcohol reduction). Qualitative questions assessed use of specific HBC techniques and barriers to administering interventions. Techniques were coded using Abraham and Michie's (2008) behavior change taxonomy.

Results: Of the six behavior domains, PCPs reported they offered HBC interventions most commonly for smoking cessation and least frequently for alcohol use. PCPs had moderate confidence in their ability to deliver HBC interventions (M_s across domains range from 4.6 – 6.0 /10, very confident); PCPs perceived their interventions to have low to moderate efficacy with their patients ($M_s = 3.8 – 5.6$ /10, very effective). PCPs felt least confident discussing alcohol use reduction and most confident encouraging patients to increase physical activity. With the exception of alcohol use, the most commonly used behavior change strategy for all behaviors was providing instruction. Other common strategies were teaching patients to use prompts or cues, motivational interviewing, providing resources/referrals, and prompting specific goal setting. Insufficient time in visits was the most oft cited barrier to implementing HBC strategies, followed by perceived low motivation among patients, and provider uncertainty about how to help patients make changes.

Conclusion: PCPs seem to lack confidence in their ability to deliver HBC interventions and tend to employ a commonly used approach among physicians of telling patients what to do. To maximize the impact of PCPs' efforts in short visits, PCPs need to learn brief, evidence-based HBC interventions. Future directions include gathering more data from a larger sample of PCPs and integrating education and user-friendly resources regarding HBC intervention strategies into family medicine residency curricula.

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A CASE EXAMPLE OF COGNITIVE-BEHAVIORAL THERAPY FOR TINNITUS IN A PATIENT CENTERED MEDICAL HOME (PCMH)

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Tinnitus is a common and sometimes severely debilitating condition that may significantly impair a patient's quality of life. It has been estimated that over 25% of Americans over the age of 20 have experienced tinnitus within the past year, and that approximately 7% of Americans experience tinnitus daily. Of those experiencing tinnitus, approximately 30% report it to be a notable problem in their lives. Hearing difficulties, sleep problems, concentration difficulties, and anxiety are among commonly reported associated concerns. To address the psychosocial impact of burdensome tinnitus, psychosocial interventions such as cognitive-behavioral therapy (CBT) are often recommended in conjunction with medical assessment and treatment (e.g., hearing aids). Given the prevalence of the condition and psychosocial impact, behavioral health treatment in a Patient Centered Medical Home (PCMH) may serve as an accessible resource for patients in need. Thus far, evaluated CBT interventions have largely been group-focused, with treatment often delivered over the course of eight or more sessions. The presented case of illustrates that brief (4-session) CBT treatment, consistent with a population health approach, can be effective in reducing patient symptoms. Overall Tinnitus Handicap Inventory (THI) score decreased from a 48 ("moderate impairment") at baseline to a 20 ("mild impairment") at discharge. Overall Tinnitus Functional Index (TFI) score decreased from a 40 ("moderate problem") during first administration to a 9.6 ("not a problem") at discharge. Implications for expanding access to care for patients with this burdensome condition and reducing medical costs are discussed.

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10:00 AM-11:00 AM

A CLIMATE FOR EVIDENCE-BASED PRACTICE IN THE PATIENT-CENTERED MEDICAL HOME

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Background: The patient centered medical home (PCMH) integrated primary care model is an important component of healthcare transformation in the United States. Although there is hope the PCMH service delivery model can facilitate the provision of higher quality healthcare, the extent to which organizational climate within the PCMH supports the implementation of evidence based practices (EBPs) is unknown. With the ever increasing efforts to reform our health system, including transforming primary care practices into PCMHs, identifying and addressing factors associated with the implementation of EBPs within the PCMH are crucial for improving the health and healthcare of the United States.

Specific Aims & Design: The purpose of this mixed-methods study was to assess EBP implementation climate (i.e., the extent to which organizational members perceive that the adoption of EBPs is expected, supported, and rewarded) and attitudes about EBPs in the PCMH. The quantitative assessment procedure was based on existing procedures for assessing organizational climate and tailored to meet the unique characteristics of the PCMH. Additionally, qualitative methods were used to uncover how the PCMH practices function.

Results: Staff and physicians from two PCMHs, the Memorial Hospital of Rhode Island Family Care Center (FCC), NCQA Level 3 PCMH, and Internal Medicine Clinic (IMC), NCQA Level 2 PCMH, were asked to participate in this study. Results from analysis of variance suggested differences between FCC (n = 39) and IMC (n = 21) staff and physicians with regard to attitudes toward EBPs, and implementation climate. In addition to reporting significantly more positive attitudes toward EBPs overall ($x\text{-bar}_{\text{FCC}} = 3.05$, $x\text{-bar}_{\text{IMC}} = 2.76$; $F(1,59) = 4.79$, $p = .033$), FCC staff and physicians reported significantly greater willingness to adopt EBPs if required ($x\text{-bar}_{\text{FCC}} = 3.07$, $x\text{-bar}_{\text{IMC}} = 2.50$; $F(1,58) = 5.48$, $p = .023$), and if the EBP was appealing ($x\text{-bar}_{\text{FCC}} = 3.41$, $x\text{-bar}_{\text{IMC}} = 2.94$; $F(1,57) = 4.84$, $p = .032$), compared to IMC staff and physicians. Additionally, FCC staff and physicians reported significantly greater educational support for EBPs than IMC staff and physicians ($x\text{-bar}_{\text{FCC}} = 2.96$, $x\text{-bar}_{\text{IMC}} = 2.48$; $F(1,58) = 4.10$, $p = .048$). Analysis of in-depth interviews elucidated themes regarding attitudes toward EBPs, as well as facilitators and barriers to EBP. While the majority of physicians reported valuing EBPs, lack of time, disjointed coordination of services, complexity of patients' presenting health concerns, and patient choice were commonly discussed as barriers to EBP.

Discussion: Understanding factors that facilitate EBP implementation within the PCMH is becoming increasingly important given widespread adoption of the PCMH model. Limitations to this study will be reviewed. Recommendations for sustainable implementation of EBP in the PCMH will be presented.

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ANALYSIS OF AN INNOVATIVE CURRICULUM IN INTEGRATED PRIMARY CARE: ASSESSMENT OF STUDENT INTEREST AND COMPETENCY

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The American Psychological Association Society for Health Psychology's Committee on Integrated Primary Care (IPC) developed an innovative course, *Integrated Primary Care Psychology: An Introductory Curriculum*, for use by graduate programs or training sites to enhance psychologists' roles in transforming health care. The curriculum includes Foundation Modules (4) and Topic Modules (11). The finalized curriculum was first taught to students in the Health Psychology II course at Mercer University's Clinical Medical Psychology doctoral program during the spring 2017 semester. The study intended to examine whether exposure to the curriculum would result in significant changes in student interest level and attitudes toward IPC, and student's actual and perceived competency levels in IPC both within themselves and against a control group.

Participants in the experimental and control group completed self-perceived competency and interest measures prior to the course. These competencies include science, systems, professionalism, relationships, application, and education. Interest in the field was obtained across multiple domains focused on interest in the specialty of IPC psychology.

Groups also completed module quizzes assessing objective competence that included Introduction to IPC; Across the Continuum: Psychology's Role in PC; PC Patients: Who Are they and How Can Psychologists be Helpful?; and IPC Interventions. Measures were given prior to teaching the modules and after they were finished. Quizzes were given weekly and corresponded to the materials related above.

Results indicate significant changes between pre and post assessment of the experimental group along with significant differences between experimental and control groups. Students enrolled in the course presented with significantly higher overall interest rates after completion of training when compared to pre-assessment measures. As well, subjective self-competency was significantly higher at post-assessment than pre-intervention. When comparing groups, students in the IPC course showed significantly higher overall interest after completion of training when compared to non-IPC control measures.

Access to the IPC curriculum increased interest rates and competency of those in the class. The course led to overall higher interest when compared to the non-IPC control group. Continued use of this curriculum is warranted to engage future professionals and improve competency of the primary care setting.

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ASSOCIATION BETWEEN HEART RATE VARIABILITY AND PSYCHOLOGICAL OUTCOMES IN GASTROESOPHAGEAL REFLUX DISEASE

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Background: Autonomic nervous system arousal has a direct impact on the brain-gut axis and can perpetuate symptoms in individuals with gastroesophageal reflux disease (GERD). Heart rate variability (HRV) is a method of characterizing autonomic functioning, with increased HRV positively correlated with one's ability to adapt to and recover from distressing situations. Our aim was to evaluate HRV in GERD, its relationships with psychological drivers of symptom experience (e.g. esophageal hypervigilance), and the influence of deep breathing on HRV. We hypothesized individuals with increased HRV would report decreased hypervigilance and psychological distress, and deep breathing would increase HRV.

Methods: Participants were adults ages 18–65 with a confirmed diagnosis of GERD who presented to a university-based outpatient gastroenterology practice for esophageal motility testing. Eligible participants completed questionnaires related to symptom severity, hypervigilance, somatization, and psychological distress. Next, participants engaged in a 5-minute baseline HRV recording while at rest and a 1-minute HRV recording while completing a standardized deep breathing exercise (6 breaths/minute). HRV was analyzed using the following time-domain methods: standard deviation of all NN intervals (SDNN) and root mean square of successive differences (RMSSD). 15 GERD patients [mean(SD) age = 38.1(13.30)yrs, 60% male] participated. Spearman's correlations evaluated relationships between baseline HRV and clinical variables. A Wilcoxon signed-rank test examined differences in HRV at baseline and during deep breathing.

Results: Although not significant due to small sample size, there were several small to moderate correlations of interest. RMSSD, a reflection of vagal tone, was moderately associated with decreased hypervigilance ($r_s = -0.31$, $p = .25$). SDNN, a marker of overall HRV, was negatively correlated with subjective distress ($r_s = -0.23$, $p = .41$) and positively correlated with anxiety ($r_s = 0.26$, $p = 0.34$). In addition, there was a significant difference in SDNN between baseline ($M=67.67$, $SD=40.18$) and deep breathing recordings ($M=100.05$, $SD=17.74$); $Z = -2.10$, $p = 0.03$.

Conclusion: GERD patients with increased vagal tone report decreased hypervigilance towards esophageal symptoms. Interestingly, higher overall HRV is associated with decreased distress at the time of HRV recording, but increased anxiety. Finally, short-term deep breathing has immediate positive effects on overall HRV.

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BRIEF PSYCHOLOGICAL INTERVENTIONS FOR ANXIETY IN ADULT PRIMARY CARE PATIENTS: A REVIEW AND RECOMMENDATIONS FOR FUTURE RESEARCH

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Anxiety symptoms are prevalent in primary care, yet treatment rates are low. The integration of behavioral health providers into primary care via the Primary Care Behavioral Health (PCBH) model offers a promising way to improve treatment options by adding a team member with the necessary skillset to deliver evidence-based, psychological (i.e., non-pharmacological) interventions for anxiety. We conducted a narrative review (1990–2016) of psychological interventions ($k = 44$) for DSM-5 anxiety disorders applied within adult primary care settings to update the literature and evaluate the fit of existing interventions with the PCBH model. The majority of studies were randomized controlled trials (RCTs; 70.5%) conducted in the United Kingdom (52.3%) or United States (27.3%). Samples were predominantly White, though 61.4% of studies did not report participants' race and/or ethnicity. The most common inclusion criterion was a primary diagnosis of anxiety or an anxiety-related disorder (54.5%). Most interventions utilized cognitive-behavioral therapy (68.2%) and were delivered individually, face-to-face (52.3%). Other common formats were face-to-face group (20.5%) and self-help (20.5%). Although the PCBH model calls for brief, time-limited treatment (e.g., up to six 15–30 minute sessions per episode), only 31.2% of interventions were offered in ≤ 6 sessions, and only 13.6% were offered in sessions typically lasting ≤ 30 minutes. Overall, 65.9% of interventions (58.6% of RCTs, 91.7% of pre-post) were effective in reducing anxiety symptoms, and 77.8% maintained the gains at follow-up. Of studies also examining depression outcomes, 62.5% (65.0% of RCTs) were effective in reducing depressive symptoms. Overall, the results support the growing consensus in the literature that anxiety can be effectively treated in the primary care setting. Although it is encouraging that most interventions significantly reduced anxiety, their longer formats (i.e., number and duration of sessions) and narrow symptom targets (most commonly threshold generalized anxiety disorder and/or panic disorder) make translation into practice difficult. Methodological limitations of the research included homogenous samples, failure to report key procedural details, pre-post designs, and restrictive eligibility criteria. We discuss clinical implications and offer recommendations to guide future research to improve the likelihood of successful translation of anxiety interventions into clinical practice.

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DEMOGRAPHICS, HEALTH LITERACY AND FOOD SECURITY OF PRIMARY CARE PATIENTS IN SOUTH LOUISIANA

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The LSU Primary Care Research Organization (LSU-PRO) is a primary care research network recently established to help facilitate research and scholarly activities among six university affiliated family medicine clinics across the southern region of Louisiana. In order to initiate collaborative data collection and describe the patient population, an exploratory demographic study was conducted utilizing purposive sampling of 30 patients per full-time practitioner. In addition to standard demographic, medical and psychosocial history information, sampled patients were administered the Rapid Estimate of Adult Literacy in Medicine-Revised (REALM-R; Bass, 2003) and the U.S. Household Food Security Survey Module (USDA, 2012). To date, data have been collected from 292 participants at five of the six clinic sites. Results indicate that the sample is older ($M = 62.75$ years, $SD = 18.97$, range: 1–104), 54.9% white, 39.6% African American, 27.6% on Medicare, 27.2% on Medicaid, and 21.6% uninsured. 67.2% live in HRSA-designated medically underserved and/or rural (37.5%) areas. 60.4% have at least two chronic diseases, with the highest prevalence for hypertension (55.6%), hyperlipidemia (25.9%), Type 2 diabetes mellitus (20.8%), and anxiety (11.9%). 59.7% are overweight or obese, and 28.7% are current smokers. REALM-R scores indicate that 49.4% are at risk for low health literacy, and 37.4% have marginal, low or very low food security. Health literacy and food security scores were positively correlated among the urban, but not the rural participants ($N = 143$, $r = .20$, $p \leq .02$), and multinomial logistic regression analyses indicated that the combination of high BMI and low health literacy scores significantly predicted low food security scores among the urban participants [$\chi^2(33, N = 119) = 54.46$; $p \leq .01$], accounting for between 37% and 42% of the variance (Cox & Snell's $R^2 = .367$; Nagelkerke's $R^2 = .416$). Future directions include developing primary care based interventions for obesity and hypertension within the context of low health literacy and low food security environments.

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DEVELOPMENT AND IMPLEMENTATION OF A PSYCHOLOGY-BASED CHRONIC PELVIC PAIN CURRICULUM FOR OB-GYN RESIDENTS

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Chronic Pelvic Pain (CPP) is among the most common issues in gynecology clinics and many of CPP patients present with comorbid psychological problems (Howard, 2000). Despite its high incidence, there seems to be a significant knowledge gaps about CPP among medical providers. Deficient understanding of CPP issues can lead to physicians' frustration, negative attitude, and possibly avoidance of addressing their patients' CPP issues, ultimately affecting the quality of care provided (Cheong & Stones, 2007; Denny & Mann, 2008). Thus, this project targeted the development of an educational program with Ob-Gyn residents aiming a) to increase understanding the differences between functional and structural CPP; b) to expand comprehension of CPP's most common psychological aspects; and c) to increase awareness of their own attitude towards this population.

Individual interviews with Ob/Gyn attendings and residents supported the existence of negative attitude towards CPP patients and limited understanding of psychological factors associated with this condition. Then, a multidisciplinary lecture was provided to 13 Ob/Gyn residents primarily aiming the three goals aforementioned.

A questionnaire assessing resident attitude and perception about CPP (Witzeman & Kopfman, 2014) was administered prior to starting the lecture and 45 days after. Data suggested reduction of negative attitude towards CPP patient as well as in their perception of the prevalence of CPP. In contrast, residents reported increase in their perception of lack of time to see CPP patients. No change was noticed in residents' empathy, knowledge of pain medication, influence of mentor attitude, confidence in current knowledge, and desire to increase knowledge about CPP. Feedback provided during individual interviews indicated their appreciation for learning how to convey information about psychological aspects of CPP to their patients, without dismissing their somatic symptoms. Some of them also acknowledged increased compassion and awareness of their own negative attitude towards their patients and expressed commitment to keep that in mind when providing care. Regarding time available to see CPP patients, several residents shared that after better understanding how these patients think and react emotionally, they would like to have more time to properly address their patients' needs. Finally, residents expressed their openness for additional training on the non-medical aspects of the treatment of CPP.

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GROUP MEDICAL VISITS: INNOVATIVE APPROACH TO IMPROVING HEALTH CARE VALUE FOR SELECT CONDITIONS

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RATIONALE: Innovations in care delivery are essential to address the growing burden of chronic disease and health expenditures. We assessed evidence of effectiveness of group healthcare models, involving shared medical visits among patients diagnosed with the same disease (e.g., diabetes, hypertension) or those who experience similar changes in their healthcare needs (e.g., pregnancy, aging), to improve health outcomes across the life course (pediatrics to geriatrics).

METHODS: We systematically reviewed randomized controlled trials designed to compare group versus individual medical care on health outcomes and service utilization. Studies were identified through the PubMed electronic database (through December 2016) and the reference lists of these articles and previously published reviews.

RESULTS: Forty-three articles met inclusion criteria for analysis. Studies focused on patients with diabetes (n=28), women receiving prenatal care (n=7), and patients with other chronic diseases and health conditions (e.g., asthma, hearing disability, cancer) (n=9). Seventy-four percent (n=32) of studies demonstrated significantly improved biophysical outcomes and/or care utilization (e.g., fewer emergency department visits, more preventative screenings) for patients who received group care compared to traditional individual care across health care conditions. Among articles that included financial analyses, most demonstrated cost savings for group care compared to individual care (80%, 4 of 5 studies).

IMPLICATIONS: Despite heterogeneity in populations, conditions and outcomes, group care models offer an approach to meet “the triple aim”: enhance health care quality, improve health outcomes and reduce costs. Implications for the transformation of health services delivery include organizational restructuring (i.e., dedication of hospital space to group care) and financing systems reform (i.e., alternative reimbursement models for provision of group care).

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D152

10:00 AM-11:00 AM

INTEGRATING BEHAVIORAL HEALTH SERVICES IN THE EMERGENCY DEPARTMENT: A NEW MODEL OF INTEGRATED PATIENT CARE

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Integrating behavioral health services in primary care settings has become standard best practices in many medical centers. Unfortunately, disadvantaged populations including minorities, immigrants, people without health insurance, and low income households comprise underserved populations that currently rely disproportionately upon Emergency Departments (ED) for primary care. Among these populations, a large percentage of patients have unrecognized behavioral health treatment needs. Patients with untreated behavioral health issues are more likely to be admitted to the hospital and repeatedly rely on ED services, creating a significant burden on healthcare systems with high economic costs. With an estimated 130 million patients visiting the ED annually, ED-originated behavioral health intervention efforts have the potential for considerable impact on public health by promoting change in these high risk and hard to reach populations.

Traditionally, behavioral health interventions in EDs have focused solely on substance use (ie, tobacco, alcohol, illicit drug use) using screening, brief intervention, and referral to treatment (SBIRT) as the approach. While SBIRT has been established as a gold standard for alcohol use, it has its limitations and pitfalls: screening can be time consuming, physicians lack specialized behavioral health training, and patient engagement in follow-up treatment plans is underwhelming. These drawbacks are particularly salient in the ED, where the focus is on acute medical care rather than chronic condition management. To address these limitations, we have integrated a behavioral health service (BHS) in the ED and enhanced SBIRT.

The BHS utilizes computer adaptive screening to limit assessment time while increasing understanding of the patient’s behavioral health needs. Screening results are integrated into the electronic health record to enable behavioral health-related communication between physicians and patients. BHS health coaches provide brief interventions for a multitude of behavioral health focuses (mental health, stress management, suicidality, sleep, chronic pain, medication adherence, etc.) to ultimately change poor health habits that result in ED utilization; use mobile applications to further care beyond the ED visit; conduct follow-up calls to increase engagement in post-ED behavioral health treatments; and communicate with patients’ primary care providers to improve continuity of care. This integrated approach provides a new model of care aimed at improving healthcare outcomes and reducing healthcare costs.

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D153

10:00 AM-11:00 AM

MEASURING PRACTICE VARIATION IN INTEGRATED PRIMARY CARE: VALIDATION OF THE PPAQ-2

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Improving model fidelity is one way to optimize patient experiences and clinical outcomes in integrated primary care. A crucial first step in this process is to assess practice variation in a systematic manner. The Primary Care Behavioral Health Provider Adherence Questionnaire (PPAQ) was originally designed to assess behavioral health provider fidelity to the Primary Care Behavioral Health model. However, the original PPAQ did not reflect practices that are unique to other common models in integrated care settings, such as collaborative care management (CCM). To expand the PPAQ, an item pool was developed based on a literature review that identified critical components of CCM. Four CCM content experts, including clinicians and researchers, provided multiple rounds of review to ensure a high degree of content validity. The resulting PPAQ-2 was then administered via anonymous web-based survey to integrated care providers (n=253) from diverse practice settings (i.e., Veterans Affairs, academic centers, and community organizations). Confirmatory factor analysis was conducted for each of the two PPAQ-2 scales (PCBH and CM) to assess the theorized factor structure. Results for both PPAQ-2 scales yielded adequate model fit measures following the removal of seven items. All retained items had significant (i.e., $p < .05$) and meaningful (i.e., $> .300$) factor loadings. The PCBH scale consisted of five practice domains: clinical interventions, practice management, referral management, collaboration with the primary care team, and prohibited behaviors. The CCM scale also consisted of five practice domains: patient identification, providing self-management support, supervision/care coordination, measurement-based care, and panel management. Composite reliabilities of the 10 practice domains ranged from acceptable (.719; patient identification) to excellent (.941; measurement-based care). Average fidelity scores within domains were highest for providing self-management support and lowest for panel management. Study results indicated that the PPAQ-2 is a psychometrically sound measure that can identify practice variation across models of integrated care by examining provider adherence. The PPAQ-2 can be used to advance integration 1) through future decomposition studies that identify provider behaviors which best predict patient and program outcomes, and 2) by focusing implementation support initiatives to reduce unwanted variation and promote high fidelity practice.

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10:00 AM-11:00 AM

OPPORTUNITIES TO TREAT TOBACCO USE IN VA: PREVALENCE OF TOBACCO USERS UTILIZING MENTAL HEALTH SERVICES

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Among individuals with mental health (MH) conditions, cigarette smoking is common and a majority of smokers do not seek tobacco cessation-specific treatments. As such, providers in MH clinics have begun investigating strategies to embed tobacco cessation services into routine clinical practice such as at MH appointments and integrated primary care mental health (PCMH) appointments. The extent and rate of which tobacco users are utilizing these different services is not fully known - understanding utilization patterns of smokers within a large healthcare system can guide research and clinical efforts by highlighting the need for and ideal placement of tobacco use interventions. The objectives of this presentation are to: (1) examine tobacco users' MH service utilization (PCMH, MH, both) in VAs within one geographic region to determine need for embedded tobacco services; and (2) assess the proportion of encounters in which tobacco is being addressed in above clinics. A data pull of medical records of VAs across the Northeast region conducted during a 12-month period in 2014. Data included patient demographics, tobacco use status, encounter type (PCMH and MH) and three diagnoses associated with each encounter. Data from 108,926 mostly white (92.8%), mostly male (91.2%) veterans (average age 57.5) were used. 30.7% were tobacco users; 38.6% of tobacco users and 22.1% of nonusers utilized MH services. Among tobacco users, 4% used PCMH services; 26.9% used specialty MH services; and 7.5% utilized both. There were 443,241 MH encounters in this region in this one-year period; of those, tobacco use was a coded diagnosis at only 1.3%. Overall, these findings suggest that tobacco users are high utilizers of MH services compared to nonusers, and in particular utilize MH clinics more so than PCMH clinics. Tobacco is infrequently coded as a diagnosis at any given encounter, suggesting that it is not prioritized in MH clinics. This presentation will increase awareness of tobacco use prevalence in a vulnerable MH population and encourage researchers and clinicians to consider tobacco and integrate its treatment and research into daily practice. We will also discuss interrelationships between tobacco and other MH diagnoses, examine how patient demographics relate to service utilization, and describe implementation strategies for tobacco interventions that can be embedded within other MH treatments.

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D155

10:00 AM-11:00 AM

VETERANS' PRESENTING CONCERNS IN PRIMARY CARE MENTAL HEALTH SERVICES DIFFER BY GENDER

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Department of Veterans Affairs (VA) Primary Care Mental Health Integration (PCMHI) programs are designed to improve the detection and management of behavioral health concerns in primary care. PCMHI services are population-based, emphasizing functional assessment and problem-focused interventions to restore functioning. While administrative data suggest that depression, anxiety, PTSD, and alcohol misuse are the most common diagnoses recorded in PCMHI, little is known about the nature and breadth of functional complaints (e.g., physical limitations, interpersonal concerns) reported by patients. This presentation will summarize the results of a postal survey of Veterans' functional concerns and priorities for PCMHI. Data were obtained from 281 Veterans who received PCMHI care in a northeastern region during VA fiscal year 2016. Survey items focused on 24 biopsychosocial domains. Items queried whether participants experienced specific functional concerns in the past year, if they had previously addressed those concerns with a PCMHI provider, or if they would consider addressing those concerns in the future. An additional item asked participants to rank their top three priorities for future treatment. Participants were primarily Caucasian (76%) males (87%; age M[SD]=58.9[13.1] years. Most reported significant problems with sleep (83%), motivation (80%), stress management (75%), and pain (71%) in the past year. Relative to men, women more frequently endorsed relationship (70% vs. 50%, $\chi^2(1)=3.871$, $p=.049$) and family stress (82% vs. 56%, $\chi^2(1)=6.385$, $p=.041$), feeling unsupported (70% vs. 39%, $\chi^2(1)=9.909$, $p=.002$), changes in appetite (71% vs. 45%, $\chi^2(1)=7.617$, $p=.006$), and general difficulty managing stress (94% vs. 72%, $\chi^2(1)=7.650$, $p=.006$). Overall, problems with sleep, stress, motivation, concentration, pain, and anger were identified as the issues that patients previously addressed in PCMHI (64–78%). Compared to men, however, women were more likely to endorse having addressed interpersonal concerns in PCMHI, such as feeling unsupported (69% vs. 38%, $\chi^2(1)=9.171$, $p=.002$), and experiencing relationship stress (89% vs. 53%, $\chi^2(1)=11.946$, $p=.001$) and family stress (89% vs. 60%, $\chi^2(1)=8.788$, $p=.003$). Participants' top priorities for future treatment included addressing anger, stress, low energy, sleep, and concentration. Discussion will focus on biopsychosocial assessment to capture functional concerns and best match PCMHI services to patient needs.

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10:00 AM-11:00 AM

FINANCIAL MANAGEMENT SUPPORT FOR SSA BENEFICIARIES: LOOKING BEYOND THE PAYEE

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Research objective: People receiving benefits from the Social Security Administration (SSA) who struggle to manage their money may be assigned a representative payee (payee henceforth), who receives the beneficiary's income and ensures that their basic needs are met. While having a payee can have a positive effect on beneficiary health and well-being, there is a shortage of people willing to be payees, and many who would benefit from the support are resistant to entirely relinquish control of their finances. There is no support available for SSA beneficiaries who face financial difficulties but are not considered incapable.

This study used qualitative methods to explore the potential for providing more flexible financial management support to SSA beneficiaries with mental illness, which would reduce the burden on the payee mechanism and offer support to a larger group of people. In addition to conducting focus groups and individual interviews with people with experience of having a payee, or serving as one, we conducted a review of the financial services environment exploring potential products and services which could support more flexible support for SSA beneficiaries. This included interviews with financial services and legal professionals and experts.

Principal Findings: The payee mechanism provides valuable support to some people with mental illness, without which they would struggle to meet their basic needs, but it can also create tension in relationships, cause frustration for those with a payee, and burden those serving as payee. In some cases the financial difficulties that people face which have caused them to be recommended or assigned a payee stem from their poverty and lack of access to appropriate financial services and products rather than their mental illness per se. There are a number of innovative financial services and products available which could enable some people currently assigned a payee to take more control over their finances, although some of these services and product would require adaptation to ensure their suitability for this specific population.

Providers of mental health services should be made aware of financial management support mechanisms, including available financial services and products, which may help some clients to retain control of their own finances and improve their financial situations. Additionally, the financial services industry should accommodate the specific needs of people with mental illness in developing products that minimize negative effects and maximize the potential for people to safely retain control of their own finances.

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10:00 AM-11:00 AM

A SYSTEMATIC REVIEW ON INTERVENTIONS FOR HEALTH ANXIETY IN THE CONTEXT OF CHRONIC ILLNESS: AN UPDATE FROM 2014 TO 2017.

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Purpose. Individuals living with chronic illnesses often experience concerns about their symptoms or illness returning or progressing, known as health anxiety (HA). While some interventions have been designed to treat HA within specific illnesses, it remains unclear which interventions may be effective across chronic illnesses. This study is an update on a systematic review of literature on interventions that may influence HA in chronic illnesses.

Method. Relevant studies were identified through PsycINFO, PubMed, CINAHL, Web of Science, and SCOPUS, from January 1996 to October 2014. After filtering based on inclusion and exclusion criteria, 24 articles remained. An updated search of articles dated November 2014 to October 2017 was performed using the previously established search terms. The same inclusion and exclusion criteria were applied.

Results. Several new interventions were identified in this update (n=31), bringing the final total number to 55. The study designs included: randomized control trials (n=21); single-arm observational studies (n=3); pilot studies (n=5); and quasi-experimental trials (n=2). The HA construct was a primary outcome in less than half of the studies (n=13). Diseases studied included cancer (n=14), Parkinson's disease (PD, n=7), diabetes (n=6), cardiac illness (n=3), and seizure (n=1). The types of interventions included psychotherapies (n=13); medical interventions (n=10); exercise and training (n=5); rehabilitation (n=2); and education (n=1). Consistent with previous findings, exercise interventions were mostly conducted in PD and significantly reduced HA. Psychotherapeutic interventions were effective in reducing HA in cancer (n=10 significant reduction; n=1 no significant change) and some components of HA in cardiac samples (n=1). Medical interventions in diabetes had mixed results (n=3 effective in reducing HA; n=2 no reduction), and in seizure reduced HA (n=1). Medical interventions investigated in cancer and in cardiac illness yielded little influence on HA.

Conclusions. The update of this review suggest that while the number of studies has doubled, findings are consistent with previous research. Most interventions are tested only in specific illnesses (i.e. exercise in PD, psychotherapy in cancer and cardiac illnesses, medical interventions for glucose in diabetes). Efforts to examine the mechanisms of action on reducing HA may be beneficial, and possibility of cross-disease interventions has yet to be investigated.

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10:00 AM-11:00 AM

“THEY ARE NOT ALONE, WE ARE NOT ALONE”: CULTURALLY BASED PEER SUPPORT FOR HIGH-RISK POPULATIONS

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Providing ongoing peer support to high-risk populations is a promising approach to address significant public health/mental health problems such as suicide, avoidable hospitalizations, substance abuse, homelessness, domestic violence, and caregiver burden. Rutgers University Behavioral Health Care provides 24/7 telephone peer support for high-risk groups including police, veterans, first responders, child protection workers, caregivers of those with dementia, and mothers of children with special needs. Services are culturally based in that clients are paired with peer supporters based on shared social roles—e.g., veteran, police officer, caregiver—rather than clinical features or diagnoses. Sampling from these services, 10 qualitative in-depth interviews were conducted with peer supporters. Interviews were recorded, transcribed, and analyzed using qualitative thematic analysis. Key results included the importance of culturally based shared social roles to the effectiveness of the peer support relationships. Shared or similar personal experiences and lived knowledge of the unique cultures of these populations were identified as facilitating rapport and strengthening the peer support relationship. Confidentiality was recognized as key in fostering the connection between the caller and the peer supporter. As a guide to their work, peer supporters noted the importance of all four components of a model of reciprocal peer support: 1) connection and pure presence (rapport building); 2) information gathering and risk assessment; 3) case management and goal setting; and 4) promoting resilience, affirmation, and praise. The simple act of being there was identified as an important aspect of peer support relationships as callers are reminded that they are not alone in their struggles. Peer supporters also noted rapid and well-organized access to licensed clinicians and close supervision as important, especially in crisis situations. They also emphasized the importance of intentional ongoing follow-up with callers. Difficult aspects of being a peer supporter included bringing the job home and taking on clients' problems, while positive effects included being able to use their experiences to help others and give back to their communities. In summary, peer supporters identify organization of support around shared social roles, a comprehensive model for providing support, supervision, and back-up as key features of their work with high-risk groups.

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D159

10:00 AM-11:00 AM

COMPARING CONSTRUCTS OF PROBLEM SOLVING IN THE PREDICTION OF SUICIDAL IDEATION

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Introduction: Deficits in problem solving have emerged as a potentially important and modifiable risk factor for suicide. One body of research has defined problem solving as a major component of executive functioning assessed by neuropsychological proxy measures. Another body of research has focused on *social* problem solving, which involves one's beliefs and emotional reactions to stressful problems that occur in real life. The current study aims to build a bridge between these two areas of research by comparing the relative contributions of neuropsychological measures of problem solving and social problem solving in the prediction of suicidal ideation.

Methods: Participants were students at Drexel University who were 18–29 years of age and able to speak English. Recruitment was conducted through Sona, an online participant management software. Study measures included a demographics survey; two traditional neuropsychological measures of problem solving: the Iowa Gambling Task (IGT) and the Tower of London (TOL); a measure of real-life problem solving: the Social Problem-Solving Inventory-Revised: Short Form (SPSI-R:S); and the Beck Scale for Suicide Ideation (BSS). An evidence-based suicide risk assessment and safety planning protocol was completed for students who endorsed suicidal thoughts. A debriefing statement and list of counseling and emergency resources were provided to all participants.

Results: The final sample included 192 students, the majority of whom were female (66.7%) and either Asian (43.2%) or White (39.6%), with a mean age of 20.4 years. Hierarchical linear regression was used to assess the ability of neuropsychological measures (IGT and TOL) and social problem solving (SPSI-R:S) to predict suicidal ideation (BSS) after controlling for significant covariates. Sex, sexual orientation, tobacco/drug use, and English as a first language were entered at Step 1, explaining 34.6% of the variance in suicidal ideation. After the entry of the IGT, TOL, and SPSI-R:S at Step 2, the total variance explained by the model as a whole was 49.2%, $F(7,184) = 8.40, p < .001$. In the final model, only sexual orientation, tobacco/drug use, first language, and the SPSI-R:S were statistically significant, with social problem solving making the greatest unique contribution to the prediction of suicidal ideation, ($\beta = -.36, p < .001$).

Discussion: These results suggest that social problem solving is an important construct to assess for suicide risk. Problem-Solving Therapy, which aims to improve social problem solving, may be an efficacious intervention in the reduction of suicidal thoughts.

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10:00 AM-11:00 AM

CORRELATES OF PSYCHOLOGICAL EATING BEHAVIOURS IN EARLY PSYCHOSIS INDIVIDUALS.

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In early psychosis individuals (EPI), the initiation of antipsychotic medication, mostly those of second-generation, was found to drastically increase weight even over the short period of time. While it has been suggested that the atypical medication can increase appetite, few research examined the correlated of psychological eating behaviours in EPI.

Objective: to analyze the correlates of psychological eating behaviours with anthropometric, metabolic, psychiatric/functional outcomes in EPI.

Methods: 29 EPI (18 men; mean age: 25.67 ± 2.95 ; mean BMI: $31.50 \pm 6.91 \text{ kg/m}^2$) whose primary diagnostic was schizophrenia or schizophrenia spectrum disorders (52%) referred to a physical activity program were included in the present study. They completed the three-factor eating questionnaire assessing cognitive dietary restraint (CR; eating restraint to loose weight), uncontrolled eating (UE) and feeling of hunger (FH). Body composition was evaluated with an anthropometric scale. Metabolic outcomes were measured with blood samples. Psychiatric/functional outcomes were assessed after interview with a research assistant.

Results: Regarding anthropometric outcomes, only flexible CR was correlated to lifetime highest weight reached ($r = 0.54, p = 0.004$), but also to waist circumference ($r = 0.52, p = 0.002$), BMI ($r = 0.47, p = 0.01$), and systolic ($r = 0.48, p = 0.01$). UE was highly correlated with FH ($r = 0.62, p$

Discussion: These results showed that psychological eating behaviour may have a role in the development of weight gain since associations were found with several anthropometric outcomes but also with fasting glucose. Consequently, more investigation is needed on the role of psychological eating behaviour.

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10:00 AM-11:00 AM

DESCRIPTIVE DATA OF PATIENTS WITH SUICIDAL IDEATION PRESENTING TO AN EMERGENCY ROOM; WHO ARE THEY AND WHAT OCCURS POST ADMISSION?

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Introduction: Suicide is the tenth leading cause of death in the United States. As such, it is important for healthcare providers to be aware of risk factors associated with suicidality and to provide appropriate follow-up treatment. Therefore, the purpose of this project was: 1) to examine demographic features of individuals who endorsed suicidal ideation (SI) within an emergency room department (ED), and 2) to assess the follow-up interventions provided for these patients.

Methods: Participants were 4,578 individuals who presented to the ED at the University of Kansas Health System (KU) between April – June 2017. Data were extracted from the electronic medical records. Upon admittance, each patient was screened for depression and SI. Participants who screened positive were asked follow-up questions to determine risk level.

Results: Of the total sample, 144 individuals endorsed depression (3.15%) and 148 endorsed SI (3.23%). Of individuals who endorsed SI, 51% were male, and ages ranged from 12 – 94, with a mean age of 37.77. Most (59.7%) were prescribed psychotropic medications; however, it was unclear whether these individuals were taking these medications at the time of their admittance. Half (50.3%) had a history of substance abuse and 46.3% were current tobacco users.

Of patients who endorsed SI, 96 (64.4%) reported a specific plan to harm themselves, 75 (50.3%) indicated that the plan was accessible, and 75 (50.3%) described a plan that was lethal.

Most (60.4%) received follow up treatment at KU post-ED visit. The majority (39.6%) were discharged from ED, while 37.6% were directly admitted to the KU psychiatric unit, and 23.5% were transferred to other inpatient psychiatric facilities. Most (61.7%) had not been to an ED or been hospitalized for mental health issues at KU prior to their visit. In the 3-month span, 12.8% were admitted to the ED more than once (up to 7 separate visits).

Conclusion: Analysis of descriptive data offers valuable insight for recognizing and providing care for those with SI. Most individuals who endorsed SI received follow-up care within the KU system; however, due to capacity restrictions, some were referred to outside medical facilities. This may result in gaps in care. A small portion of the sample repeatedly cycled through the ED for psychiatric care in a short period of time. Further analysis as to these patients' needs is necessary to address their concerns and diminish overutilization of the healthcare system.

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10:00 AM-11:00 AM

DEVELOPING AN INTEGRATED SELF-MANAGEMENT INTERVENTION FOR TEENS WITH POLYCYSTIC OVARY SYNDROME: FOCUS GROUP FINDINGS

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Polycystic ovary syndrome (PCOS) is the most common female endocrine disorder, affecting 6%-18% of reproductive-age women. Increasingly diagnosed during the challenging development period of adolescence, adolescent and young adult women with PCOS face significant challenges to feminine identity and body image that adversely impact their psychological well-being and health related quality of life. Despite the high prevalence of mental health concerns within this population, current clinical practice guidelines for PCOS focus on healthy lifestyle modifications and medication adherence but fail to include strategies for addressing mental health promotion or prevention. Our research team is developing an integrated self-management intervention specifically designed for adolescents with PCOS. The results presented in this abstract report findings from the first of a series of focus groups with adolescents with PCOS (N=7, ages 15–18) and a separate focus group with their parents (N=7, 5=moms; 2=dads) aimed at informing the development of the intervention. Ryan and Sawin's Individual and Family Self-Management Theory was used as the framework for discussion guide development and explored individual- and family-level context, processes, and proximal outcomes related to self-management. Transcripts from audio recorded focus groups were coded and analyzed for themes. Primary themes that emerged from both groups were (1) information seeking, (2) accepting the diagnosis, (3) adapting (both physically and emotionally) to the diagnosis, (4) the importance of family support, (5) bullying and discrimination due to physical manifestations of PCOS. Navigating the healthcare system emerged as a theme from the parent group. One parent eloquently stated, "And you have two worries, you have the clinical worries...But also, you have the visible effects, right? You have the overweight, you have – at that age, physical appearance is very important for them, right? They are teenagers. They are looking at other girls and comparing themselves with other girls." The similar themes that emerged between the two groups suggest that we incorporate a family-level component to the integrated self-management intervention. Additional focus groups will provide feedback on existing educational resources as well as prototype of the final intervention once developed.

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10:00 AM-11:00 AM

EXAMINATION OF DISCLOSURE AFTER ADVERSE CHILDBIRTH

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Introduction: Childbirth can be an adverse experience for some women that contributes to postpartum psychological distress. Disclosure (communication of personally relevant information, thoughts, and feelings) of a negative experience may affect distress. Disclosure has demonstrated associations with improved psychological adjustment following adverse experiences in other populations, such as decreased posttraumatic stress disorder (PTSD) symptoms. Little research has examined disclosure in the context of adverse childbirth and postpartum adjustment. The purpose of this study was to identify 1) the proportion of women who disclosed their adverse childbirth, 2) characteristics of this disclosure, and 3) the relationship between disclosure and characteristics of disclosure and PTSD symptoms.

Method: Women who were at least 18 years of age, residing in the United States, able to read/write in English, and the biological mother of a living child resulting from an adverse childbirth in the year prior to study participation ($N=166$) were recruited from social media for an online survey. Sample characteristics: Majority Caucasian (86%), married (77%), college-educated (57%), employed (53%), private/employer insurance (67%). The survey assessed disclosure methods, targets, and content, reasons for and for not disclosing, and PTSD.

Results: 81% of participants reported that they disclosed their adverse childbirth experience.

Methods: talking in person (92%) or via phone (49%), writing an online message post (67%), or texting (58%). Targets: romantic partner (89%), family member (82%), close friend (79%). Content: description of experience (98%), feelings (77%) and thoughts (72%) related to the adverse childbirth. Reasons for disclosure and non-disclosure are being explored through qualitative data analysis. Women who disclosed reported significantly lower severity of PTSD symptoms ($M=24.93$) compared to those who did not ($M=36.56$), $t(89)=2.09$, $p=.04$. Of those who disclosed, women whose disclosure content included feelings reported significantly lower severity of PTSD symptoms ($M=22.04$) compared to those who did not disclose feelings ($M=32.60$), $t(71)=1.99$, $p=.05$.

Conclusions: A high proportion of women reported that they disclosed their adverse childbirth experience. The disclosure rate identified here is similar to other types of adverse experiences, such as sexual assault. Participants most often disclosed in person to individuals with whom they had close, personal relationships. Disclosure was related to fewer PTSD symptoms, with disclosure of feelings being most important. This information can be used to develop optimal treatment strategies for women after an adverse childbirth experience.

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D164

10:00 AM-11:00 AM

HEALTHCARE DISPARITY AND MENTAL HEALTH STIGMA

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Diabetes mellitus occurs two to three times more often in those with severe mental illness (De Hert, et al., 2011); however, they receive less routine medical care to monitor diabetes (Frayne, Halanych, & Miller, 2005). Intervention for diabetes mellitus often involves behavioral changes like diet and exercise initiation (Shultz, Sprague, Branen, & Lambeth, 2010). Physicians are encouraged to discuss behavioral recommendations; however, they do not consistently do so due to lack of time and patient noncompliance (Kushner, 1995). Providers may hold bias against patients with mental illness and believe that they are less likely to understand and be adherent to behavioral change. Limited research examines physicians' willingness to conduct such interventions with patients with severe mental illness in comparison to patients without severe mental illness. This study examines the effect of patient diagnosis and gender on physician willingness to discuss dietary and exercise interventions. We also examine the relationship between physician willingness to refer to behavioral specialists and stigma predictor variables. Participants were physicians recruited at primary health care centers in West Virginia.

Participants were given case vignettes of a patient who is exhibiting symptoms of diabetes mellitus during a wellness visit. Mental health diagnosis (schizophrenia, no diagnosis) and gender were manipulated and were counter-balanced. The participants were asked about willingness to address health behaviors with the patient. The Perceived Devaluation and Discrimination Scale (PDD), which measures the endorsement of items indicative of stigmatizing attitudes toward individuals with mental illness (Vauth et al., 2007) and the MICA-4, which assesses health care professionals' attitudes about psychiatry and patients with mental illness (Gabbidon et al., 2013), were administered.

Preliminary analyses of the current data support differences in physicians' willingness to conduct dietary counseling with patients diagnosed with severe mental illness and patients without severe mental illness. Stigma was found to be a predictor of low willingness to address health behaviors with patients with severe mental illness. This study provides valuable information about physicians' willingness to address health behaviors, which can be used to both add to the limited research and increase awareness of barriers patients with severe mental illness face when seeking healthcare.

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D165

10:00 AM-11:00 AM

MEDIATING EFFECT OF INSULIN ON IMPACT OF STUNTING ON CHILD NEURODEVELOPMENT IN A COHORT OF RURAL INDIAN CHILDREN.

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Stunting is highly prevalent in low and middle-income countries bringing severe implications to health, such as altered endocrine function and poorer neurocognitive development. Increasing evidence also suggests that insulin influences several aspects of cognition and behavior, affecting working memory, impulsivity, and executive functions. In this study, we aimed at investigating the complex interplay between insulin metabolism, undernutrition, and neurodevelopment in a population where stunting is highly prevalent. This is a cohort study implemented in North India, involving three different blocks of the Palwal district. The study included children from 6 to 12 yo, to which were applied a comprehensive battery of cognitive tests (General IQ: Porteus Maze test; Semantic interference: Stroop test; Learned Vocabulary; Phonemic Fluency; Short-term Memory: N-Back; Visual Attention: Color Trails Test; Reward sensitivity: Delay of gratification and Cognitive flexibility: Wisconsin Card Scoring Test(WCST)). Insulin was measured after an overnight fasting. Height was standardized for age and sex using WHO Growth Standards, and standardized height (STDH) was used as a proxy for stunting or chronic undernutrition. Linear regression was conducted using STDH or insulin as independent factors and neurocognition tests were the outcomes. Co-variables for the linear regression models were maternal height (to control for genetic effects), child age (for scores non-normalized to age-raw scores), and socioeconomic status (SES). Mediation analysis was performed using PROCESS macro for SPSS. Statistical significance was set at $p \leq 0.05$. There was a positive correlation between STDH and fasting insulin. Insulin was positively correlated to Phonemic Fluency, N-Back, and Color Trails scores, negatively associated to Color-Word Stroop Test, but non-statistically associated with both IQ (Porteus) and perseverative errors in the WCST. STDH was positively associated with IQ, Phonemic Fluency, N-Back, and Color Trails, but non significantly associated with Color-Word Stroop and perseverative errors on the WCST. Delay of Gratifications was not associated with both STDH and Insulin. Follow-up analysis of mediation for Phonemic Fluency, N-back, and Color-Trails test showed that insulin mediated the effect of height on Phonemic Fluency (normality test $p=0.0179$), N-Back (normality test $p=0.006$) and Color Trails (normality test $p=0.0137$). We found a combined protective effect of STDH and insulin levels on many, but not all cognitive measurements, and showed that insulin mediates this relationship for constructs related to learning, short-term memory and visual attention.

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D166

10:00 AM-11:00 AM

METAMEMORY AND SELF-REGULATION IN HEALTHY ADULTS OVER AGE 50

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Self-knowledge about memory, termed metamemory, is more predictive of anxiety about memory and memory complaints than actual memory capacity. This suggests that metamemory may contribute to self-regulation of well-being as we cognitively age. We examined whether metamemory domains were associated with other psychophysiological markers of individuals' capacity for self-regulation, including actual memory capacity, high frequency heart rate variability (HF-HRV) at rest and in response to cognitive tasks, and emotion regulation. Healthy adults, aged 50 and older ($n=118$), completed the Metamemory in Adulthood questionnaire. Memory capacity was assessed using the Auditory Verbal Learning Test (AVLT) and the Auditory Consonant Task (ACT), a challenging cognitive task. High frequency-heart rate variability (HF-HRV) at rest and in response to the ACT served as an index of physiological self-regulatory capacity. Less negative affect (NA) response to the cognitive tasks indexed emotion regulation and was measured by the Positive and Negative Affect Schedule. Linear regression analyses showed that greater perceived stability of memory capacity over time, but not overall current memory capacity, was associated with better performance on the AVLT immediate ($B = .06, p = .04$) and delayed recall ($B = .06, p = .04$), and on the ACT ($B = .23, p < .01$). Perceptions of greater memory stability ($B = -.06, p = .02$), memory capacity ($B = -.15, p < .01$), and lower memory anxiety ($B = .12, p < .01$) were associated with lower NA response to the cognitive tasks. Memory stability was also associated with greater HF-HRV during ACT ($B = .01, p = .04$). When exploring potential confounders, memory stability ($B = -.01, p < .01$), memory capacity ($B = -.02, p < .01$), and lower memory anxiety ($B = .02, p < .01$), were each associated with lower depressive symptoms from the Geriatric Depression Scale (GDS). After controlling for GDS score, stability no longer was associated with NA response ($p > 0.05$), but all other associations remained significant. In conclusion, perceptions of stability in memory capacity over time were more strongly associated with actual memory capacity and better physiological self-regulation than one's perception of current memory capacity. In contrast, associations between metamemory and emotion regulation may reflect more depressed mood or anxiety, suggesting implications for interpreting clinical presentation of memory complaints. Overall, metamemory domains may be useful for understanding well-being in later life.

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D167

10:00 AM-11:00 AM

PERCEPTIONS OF SAFETY AND SUPPORT AMONG HIGH SCHOOL FOOTBALL PLAYERS UTILIZING A HELMET IMPACT DETECTION SYSTEM

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Background: Concussions are common in high school football athletes and can have severe short and long-term health consequences. New football helmets furnished with accelerometers to detect rate and location of impact have recently emerged for football programs aimed at providing advanced information to sports medicine professionals and coaches. The use of these helmets offers the ability to rapidly and objectively assess concussions on the sideline. However, minimal research has explored athlete's perceptions of the use of these helmets in regard to their safety and feelings of support from coaches and administrators.

Purpose: The purpose of this study was to determine high school football players' perceptions of safety and support following a season of use of a Helmet Impact Detection System.

Methods: 118 high school football players from a large parochial school completed an electronic 29-item cross-sectional survey to obtain demographic information and safety perceptions at the end of a football season. Participants wore Riddell InSite Helmets (Riddell, Inc. Elyria, OH) the entire football season prior to the survey. Descriptive statistics were computed utilizing SPSS software.

Results: When asked to rate the degree to which they agreed that their coaches cared about their safety while playing football, 77.1% of players strongly agreed that their coaches cared. When asked if their administration cared about their safety 67.9% reported strongly agreeing. The players were also asked to rate the degree to which they felt the concussion helmets helped keep them safe, 71.3% of students strongly agreed and 23.2% somewhat agreed. When asked if they agreed or disagreed that they felt safer than opposing teams that did not wear the helmets only 48% of players strongly agreed. When asked if they played harder or more confidently due to the helmets 58% of players strongly agreed. Finally, 17% of players agreed that they would not play football if it were not for the helmets.

Conclusion: These findings suggest the use of instrumented helmets may encourage athletes' feeling supported by coaches/administrators and their perceptions of safety which could impact their decision to engage in football. However, more research is needed to determine if these feelings of safety translate to a change in rates of concussions compared to players with traditional helmets.

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D168

10:00 AM-11:00 AM

SEDENTARY LIFESTYLE AND THE RISK OF DEPRESSION IN PATIENTS WITH ACUTE CORONARY SYNDROMES

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Although there is good evidence that sedentary behavior is associated with poor health outcomes in healthy persons and patients with cardiovascular disease, the mental health consequences of sedentary behavior have not been widely studied. We conducted a cross-sectional analysis to examine the relationship of self-reported sedentary behavior and depression in a sample of 4043 hospitalized men and women with acute coronary syndrome (ACS) in China. Depression was assessed with the Patient Health Questionnaire-9 (PHQ-9) and, in a subset of 1209 patients, by the Beck Depression Inventory-II (BDI-II). Sedentary behavior was assessed by a 1-item self-report instrument. Results revealed that greater sedentary behavior was associated with higher levels of depressive symptoms measured by both the PHQ-9 ($P < 0.001$) and BDI-II ($P < 0.001$). Compared with patients who reported that they were seldom sedentary, patients who reported that they were frequently sedentary were 4.4 times (OR 4.4, 95% CI: 2.70–7.29) more likely to be clinically depressed (i.e., PHQ-9 scores ≥ 10) after adjusting for demographic factors, lifestyle behaviors, clinical characteristics and in-hospital treatments. Importantly, greater sedentary behavior was related to higher levels of depression in Chinese patients with ACS, independent of physical activity. These findings suggest that strategies to reduce sedentary behavior may reduce risk for depression and potentially improve medical outcomes.

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D169

10:00 AM-11:00 AM

THE EFFECT OF NONDIRECTIVE SUPPORT ON ANXIETY AND DEPRESSION IN PEOPLE WITH CHRONIC HEALTH PROBLEMS

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Research has consistently documented the positive effects of social support on physical and mental wellbeing. However, social relationships are often characterized by both positive and negative qualities, and may also lead to dissatisfaction, stress, and maladaptive coping. The ways in which social support is perceived and delivered can influence the extent to which it is helpful. An important distinction in this is nondirective versus directive support. Prescribing “correct” choices and taking over responsibility characterizes directive support, while nondirective support is accepting of recipients’ wishes and is generally cooperative. To assess the effect of these types of support on anxiety and depression in people with a chronic condition, a survey regarding health behaviors, social support, anxiety and depression was distributed via email to students and staff of the University of North Carolina-Chapel Hill. Among the 83 respondents, the number of chronic conditions ranged from 1 to 5 but was unrelated to anxiety or depression in this sample. Age (range 18–78, $M=42.02$) was associated with both anxiety and depression and so was controlled for in all analyses. 78% reported receiving support in managing their chronic health condition from a family member or friend and 74% from a medical professional. 22% met criteria for borderline anxiety and 19% for clinical anxiety, as well as 11% for borderline depression and 5% for clinical depression. Nondirective support from family and friends was associated with lower anxiety ($r = -.42, p = .001$) and depression ($r = -.27, p = .046$). From medical professionals, nondirective support was also associated with lower anxiety ($r = -.29, p = .027$). These correlations were strongly moderated by the number of chronic conditions. For the 45 (54.2%) with 1 chronic condition, the relationships of nondirective support provided by family or friends were greater for both anxiety ($r = -.46$ vs. $-.42$) and depression ($r = -.35$ vs. $-.27$) but were not significant for those with 2 or more chronic conditions. In contrast, the relationship between anxiety and nondirective support from medical professionals was heightened among those with 2 or more chronic conditions ($r = -.57$ vs. $-.29$) but non-significant among those with just 1 chronic condition. Thus, nondirective support from both family/friends and medical professionals is related to both anxiety and depression but the nature of these relationships is influenced by such contextual factors as the number of chronic conditions.

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D170

10:00 AM-11:00 AM

TRANSCRANIAL MAGNETIC STIMULATION (TMS) IN SLEEP QUALITY AMONG PATIENTS WITH MAJOR DEPRESSIVE DISORDER (MDD)

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The purpose of this study was to examine the treatment efficacy of Transcranial Magnetic Stimulation (TMS) in improving sleep quality among patients diagnosed with depressive disorders. TMS is an FDA approved treatment method for treating depressive disorders. Severe sleep disturbances, such as insomnia and hypersomnia, are often comorbid with depressive disorders. This study utilized a registry database of patients seeking TMS treatment for primary diagnoses of major depressive disorder (MDD) at the EVMS TMS Treatment Clinic ($N = 44$). Patients in the clinic undergo 1 hour of TMS treatment every day for six weeks, followed by a three-week taper period. Sleep was assessed with 3 measures: the Pittsburg Sleep Quality Index (PSQI), the Epworth Sleepiness Scale (ESS), and question 16 of the Beck Depression Inventory II (BDI-II). According to analyses, TMS is able to produce statistically and clinically significant improvements in sleep quality among depressed patients, as measured by the PSQI, with $F(1.70, 71.53) = 5.79, p = .004; \eta^2 = .121$, and question 16 of the BDI-II, with $F(1.66, 71.33) = 28.14, p < .001; \eta^2 = .396$; the ESS did not show significant changes across treatment, with $F(2, 84) = 2.72, p = .072; \eta^2 = .061$. Further analyses suggested that sleep improvements occur during the first 2 weeks of treatment. No significant changes were noted between week-two and the end of treatment showing sleep quality to be stabilized. Sleep quality appears to improve as a function of treating depressive symptoms, as sleep quality improvements were accounted for by the improvement in depressive symptoms.

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D171

10:00 AM-11:00 AM

USING QUALITATIVE METHODS TO DEVELOP A DYADIC INTERVENTION FOR PATIENTS WITH STROKE AND THEIR CAREGIVERS

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Stroke is the leading cause of death and disability among U.S. adults. Despite advances in neurological critical care that have improved physical outcomes of stroke, chronic emotional distress (e.g., depression, anxiety, post-traumatic stress), remains prevalent and interdependent between stroke patients and family caregivers. We aimed to develop an intervention to prevent chronic emotional distress in patient-caregiver dyads using qualitative methods. We conducted semi-structured interviews (N = 24) with patient-caregiver dyads and focus groups (N = 2) with nurses in a Neuroscience Intensive Care Unit (NICU) to gather multiple perspectives on the stressors and needs of SPs and CGs at risk for chronic psychiatric distress. Interviews were audio-recorded, transcribed, and coded using NVivo 8 software. Two independent raters conducted coding and resolved discrepancies. Patients were adult stroke survivors aged 28–86 years. Caregivers were spouses (50%), children (41%) and other family members (9%). The most salient challenges and impacts of stroke reported by dyads were uncertainty about future health, fear of recurrent strokes, negative emotions (e.g., sadness, anxiety), and role changes at home post-stroke. Patients and nurses agreed that skills such as mindfulness/staying in the present, problem solving, practicing gratitude/optimism, engaging in hobbies and self-care activities, and developing a supportive team of family, friends, and medical staff are beneficial to optimize recovery. Suggestions for content of a future intervention by dyads and nurses included education about emotional changes post-stroke, managing anxiety and worry, and improving communication between patients, caregivers, and medical staff. The major potential barrier to intervention delivery cited by dyads and nurses was time burden. Using this information, we developed the Recovering Together program, a 6 session (2 in-person during hospitalization, 4 at home via secure live video) dyadic skills intervention mapped directly onto themes identified through qualitative analyses. Recovering Together is the first dyadic intervention aimed to prevent chronic emotional distress in stroke patient-caregiver dyads. It includes active emotion regulation strategies such as mindfulness, problem solving, practicing gratitude, adjusting to sequelae and role changes, interpersonal communication among dyads and the medical team, and an innovative delivery format to increase feasibility and reduce time burden.

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D172

10:00 AM-11:00 AM

A MEDIATION ANALYSIS OF SELF-ESTEEM, STRESS AND RESILIENCE IN LESBIANS AND GAY MEN OVER 50

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The minority stress model (Meyer, 2003) argues that the sexual minority experience adds stressors due to a person's minority status. Stress related to stigmatization and discrimination of sexual and gender minorities may explain the disproportionate number of mental health problems found among sexual minorities (Meyer, 2003) including substance use, suicidal ideation, psychiatric conditions and low self-esteem (Bos et al., 2008). Resilience is a well-established protective factor against these mental health issues (Davydov et al., 2010) and is thought to be receptive to clinical manipulation to improve mental health (Kobau et al., 2011). While the number of studies about self-esteem have increased, few examine self-esteem in relation to stress and resilience among older sexual minorities. Thus, the aim of our study is to examine whether resilience (CD-RISC) mediates the relationship between perceived stress (PSS) and self-esteem (RSES) in lesbians and gay men over 50 (LG+50).

We recruited participants ($n = 100$) from the Dallas/Fort Worth metropolitan area who were at least 50 years old and identified as lesbians or gay men. To test for mediation, we first examined the direct path relationship (c) between perceived stress and self-esteem by regressing perceived stress on self-esteem ($\beta = -.64, p < .001$). We then examined the indirect relationship between perceived stress and self-esteem via resilience. For path a, we regressed perceived stress on resilience ($\beta = -.57, p < .001$). Lastly, for path b and c', we regressed resilience and perceived stress on self-esteem ($\beta = .32, p = .001, \beta = -.45, p < .001$, respectively). The results of the regression analyses suggest a partial mediation. To test for the mediating effect, we ran the Sobel (1982) test and found it to be significant ($z = -3.11, p < .001$). The results suggest that the "true" relationship between perceived stress and self-esteem is mediated by resilience with resilience significantly reducing the strength of the relationship. Our findings highlight the important role of resilience, which may improve self-esteem among LG+50 with high perceived stress. Therefore, clinical interventions aimed at enhancing resilience may help older sexual minorities who experience stress improve self-esteem and subsequently mental health.

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D173

10:00 AM-11:00 AM

“I NEEDED A REASON TO BE ACCOUNTABLE”: DEPRESSED PREGNANT WOMEN’S PERCEPTIONS OF MOTIVATION FOR SYMPTOM SELF-MANAGEMENT

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Background: It is estimated that up to 20% of women experience perinatal depression which can lead to many negative sequelae for the mother, child, and family. Physical activity (PA) has been proven to be an effective treatment modality for depressive symptoms, but individuals with depression often have reduced self-regulation and self-efficacy that ultimately decreases their involvement in PA and their ability to self-manage their symptoms. There is therefore a great need to further understand what motivates pregnant women with depressive symptoms to self-manage their symptoms.

Purpose: The purpose of this study is to understand the experience of pregnant women with depressive symptoms who participated in an intervention ($n=41$) that involved mindful group physical activity. The intervention was encouraged by a nurse-led motivational interview and subsequent weekly check-ins to support the participant’s involvement in symptom management.

Methods: Semi-structured interviews were performed at a postpartum visit with open-ended questions about participants’ symptom experience, the intervention, and use of self-management skills during pregnancy and during the postpartum period. A descriptive, phenomenological data analysis lens was used to analyze the data. The themes that arose were used to construct a coherent picture of participants’ general experiences with the intervention and with motivation.

Results: The following themes arose in qualitative analysis: (1) participants were most motivated to join the study after personally recognizing a need for self-care and/or receiving a provider recommendation about facing their depressive symptoms; (2) weekly check-ins provided a sense of accountability, serving as a motivator for continued participation; (3) participant motivation was reinforced by positive experiences of a safe space and shared experiences with other participants.

Conclusions/Implications: It is important to understand women’s personal experiences with this mindful physical activity intervention in order to determine key factors involved in helping pregnant women self-manage their depressive symptoms. Analysis of the data from the postpartum interviews reveal that a sense of safety among fellow participants and a sense of accountability to the overall study were important motivators for engaging in the intervention. Further, clinicians should recognize the important role they play in helping pregnant women feel motivated to engage in self-care. The themes identified in this study will be used in future studies to guide intervention refinement and to enhance translatability of non-pharmacologic low-cost self-management interventions for pregnant women with depressive symptoms.

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D174

10:00 AM-11:00 AM

AGGRESSION & DEPRESSION: RESILIENCE AS A MODERATOR IN OLDER GAY MEN AND LESBIANS

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Aggression & Depression: Resilience as a Moderator in Older Gay Men and Lesbians

Older gay men and lesbians (LG) are at risk for depression due to sexual minority stress (Fredriksen-Goldsen et al., 2013). When compared to sexual majority men, gay men report higher rates of depression (Cochran & Mays, 2000). Furthermore, single LG may be at an increased risk for depression (Kuyper & Fokkema, 2010). Aggression in older LG may be associated with negative mental health outcomes, relationship issues and may be more prevalent in gay men than lesbians (Suls & Bunde, 2005). However, anger may foster resilience if expressed in a manner that motivates positive action towards a greater purpose (Russell & Richards, 2003). Through a minority stress (Meyer, 2003) lens, we hypothesize aggression and being single are positively associated with depression. Resilience is negatively associated with depression. Aggression, resilience and being single account for a significant proportion of variance in depression and resilience moderates the relationship between aggression and depression. There is a significant difference between older LG aggression, resilience and depression scores. After IRB approval, we recruited and obtained informed consent from 50 gay men and 50 lesbians in DFW. Participants (Mage=59.0, SD=6.5) self-identified as 68% European American, 17% African American and 15% other. A hierarchical regression analysis ($F[8, 91]=10.62, p<.001$) revealed that in addition to aggression ($\beta=.32, p<.001$) and resilience ($\beta=-.24, p<.05$), being single ($\beta=.36, p<.05$) and income $<30,000$ ($\beta=.22, p<.05$) were significant predictors, accounting for 44% of variance in depression ($\text{adj}R^2=.44, p<.001$). Furthermore, the interaction effect was statistically significant, $\Delta R^2=.19, F \text{ change}=37.14, p<.001$, resilience moderates the relationship between aggression and depression. Our independent sample t-test indicated a significant difference ($t[98]=-2.14, p<.05$), between resilience scores for gay men ($M=1.80, SD=.29$) and lesbians ($M=1.91, SD=.08$) and depression scores ($t=3.39, p<.001$) for gay men ($M=1.96, SD=.28$) and lesbians ($M=1.78, SD=.23$). Depression is associated with a decrease in physical and cognitive function and an increased risk of mortality (Blazer, 2003), therapeutic priorities should address gender differences and focus on coping strategies that promote healthy aggression and depressive symptom management.

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10:00 AM-11:00 AM

COGNITIVE APPRAISAL BIASES IN DEPRESSION AND POSTTRAUMATIC STRESS

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Cognitive appraisal theory suggests that appraisals of events determine emotional, physiological, and behavioral reactions to them (Lazarus, 1991). Likewise, theories of depression and post-traumatic stress (PTS) suggest that these conditions affect or bias how individuals appraise everyday situations. To date, however, few studies have examined such associations directly and none has examined cognitive appraisal bias across multiple life contexts. Accordingly, we examined how depression and PTS symptoms related to cognitive appraisals in a large sample ($N=737$) of municipal firefighters and using a novel measure of cognitive appraisal that assesses appraisal across multiple life domains. Specifically, the Appraisal of Challenge and Threat Scale (Tomaka et al., 2012) assess cognitive appraisal of threat (vs. challenge) across multiple every day, potentially stressful, situations clustered within six life domains including conflict situations, unexpected events, public speaking, social situations, financial stressors, and transportation. Firefighters completed the ACTS along with the civilian version of the Posttraumatic Stress Checklist (PCL-C; Weathers et al. 1993), and the Zung Self-Rating Depression Scale (Zung, 1965) as part of participation in a larger study. We first categorized individuals as making high (Threat) or low (Challenge) stress appraisal across the six stress domains and then used MANOVA to examine how such appraisals related to PTS and depression symptoms. MANOVA showed depression and PTS symptoms to be strongly associated with the tendency to appraise life events as threatening vs. challenging (both $p < .01$). Supplemental regression analyses examined similarities and differences between depression and PTS symptoms across the life domains. Although both were associated with threat appraisals in social situations (both $p < .01$), depression was also related to threat appraisal of financial situations ($p = .01$) and conflict situations ($p = .02$), whereas PTS related more strongly to conflict situations ($p = .03$) and was unrelated to appraisal of financial situations (ns). Neither condition related to appraisals in the transportation domain. Overall, the results suggest that depression and PTS symptoms are strongly related to threat appraisal in some, but not all, life domains. They also show that the two conditions share similarities and differences in life domains that trigger threat appraisals.

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D176

10:00 AM-11:00 AM

CO-OCCURRENCE OF DISORDERED EATING BEHAVIOR AND OTHER HEALTH-COMPROMISING BEHAVIORS IN U.S. COLLEGE STUDENTS

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Background: Eating disorders in young adults are associated with other mental health problems and health compromising behavior. Less is known about disordered eating behavior (DEB) in college students. The purpose of this study is to examine the extent to which students who report DEB symptoms also engage in other health compromising behavior.

Methods: The National College Health Assessment (American College Health Association) was administered in the spring of 2015 to 93,034 students from 108 universities/colleges. Only undergraduates ($N=73,727$; 68% women, 35% racial minorities, 13% Hispanic) were included in this study. DEB was defined by report of vomiting or taking laxatives to lose weight and/or taking diet pills to lose weight in the past month. Logistic regression analysis was used to evaluate the association between DEB and the following health behaviors: any tobacco use (cigarettes, cigars, hookah, smokeless tobacco) or any illicit drug use (marijuana, cocaine, methamphetamine) in the past month; ≥ 1 alcohol binge drinking episodes (≥ 5 drinks/sitting) in the past 2 weeks; and sleep problems (e.g., extremely hard time falling asleep) ≥ 3 days in the past week. Separate analyses were conducted for each behavior. Covariates included age, race, ethnicity, gender, sexual orientation, and any diagnosis/treatment of a mental health disorder in the past 12 months.

Results: DEB was reported by 5.7% ($N=4,219$) of students, with 33% of these reporting laxatives only, 51% reporting diet pills only, and 16% reporting use of both laxatives and diet pills. Only 14.2% of students with DEB reported diagnosis/treatment for eating disorder (anorexia, bulimia) in the last 12 months. The prevalence of the health compromising behaviors was as follows: tobacco use 18.3%, alcohol binge drinking 33.1%, illicit drug use 18.8%, and sleep disturbance 72.1%. There were significant associations between DEB and all 4 health compromising behaviors ($ps < .001$). Students who endorsed DEB had a significantly higher odds of tobacco use (OR=2.1, 95% CI=1.9–2.2), illicit drug use (OR=1.7, 95% CI=1.6–1.9), alcohol binge drinking (OR=2.1, 95% CI=1.9–2.2), and sleep problems (OR=1.8, 95% CI=1.6–1.9).

Conclusions: In this sample of U.S. college students, DEB was associated with increased rates of health compromising behavior. Findings highlight the potential importance of the identification of DEB as a strategy for targeting of campus-based mental health and health promotion intervention.

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D177

10:00 AM-11:00 AM

DO AS I SAY, NOT AS I DO: REPORTED PHYSICAL ACTIVITY OF MENTAL HEALTH PRACTITIONERS AND THEIR EXERCISE REFERRAL PRACTICES

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Background: Physical activity can significantly improve physical health and clinical symptoms across a range of mental disorders. Accredited Exercise Physiologists (AEPs) are ideally-placed to lead physical activity interventions for people with mental illness, but referral rates to AEPs are low. Encouraging mental health professionals to actively refer to AEPs may lead to significant physical and mental health benefits for people with mental illness.

Methods: A cross-sectional paper-based survey was conducted at the 2017 Royal Australian and New Zealand College of Psychiatrists conference, to investigate delegates' knowledge and attitudes towards physical health monitoring for people with mental illness, self-reported physical activity, and to determine their understanding of the role of AEPs within mental health settings. Additionally, a subgroup of delegates underwent assessment of cardiorespiratory fitness (sub-maximal cycle ergometer test) and functional capacity (handgrip dynamometry).

Results: In total, 73 delegates completed questionnaires and 24 underwent fitness assessment. Delegates demonstrated a high level of knowledge regarding the general associations between physical activity and cardiovascular disease (CVD) risk. Furthermore they had good understanding of the higher incidence of sedentary time for people with mental illness and the associated increased CVD risk. Delegates were less knowledgeable of the role of AEPs within mental health settings and 42 (58%) had never referred a person with a mental illness to an AEP. Forty-six participants (63%) did not meet the Australian recommended guidelines for physical activity. No association between self-reported physical activity or measures of fitness and referrals to AEPs was evident.

Conclusion: Consistent with previous studies, referral rates to AEPs are low. Promoting physical activity participation for mental health professionals, coupled with professional development on the important role AEPs play in the multidisciplinary treatment of mental health consumers is vital to promote better physical and mental health outcomes for this vulnerable group.

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10:00 AM-11:00 AM

DOES THE END JUSTIFY THE MEANS? THE PSYCHOLOGICAL COSTS OF STUDENT LOANS

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Introduction: There is an increasing unease about the potential negative consequences of graduates accumulating large debts, in excess of \$1 trillion in the US alone. However, economic considerations, such as the impact on individuals' ability to access mortgages and other financial products, or the failure to repay debts, dominate current debates. We know that debts can have a detrimental impact on individuals' psychological well-being, but it remains contested whether this also applies to debts accumulated via student loans. Participation in higher education is thought to reduce economic inequality and as such may offset the negative effects of graduate debts.

Methods: An analysis of cross-sectional data derived from the UK Household Longitudinal Study. A total of 7792 adults (4511 female) aged 21 to 35 ($M=28.63$, $SD=4.29$) fulfilled the inclusion criteria; 47.2% had a higher education qualification (incl. HE diploma), 18.5% had debts from a student loan, and 39.3% had other unsecured (i.e., non-mortgage) debts. Measures of psychological well-being and mental functioning served as outcome variables (SF-12, Short-Form 12 Health Survey, and GHQ, General Health Questionnaire).

Results: Controlling for age, gender, and income, debts from student loans correlated negatively with measures of psychological well-being and mental functioning. The detrimental effect of student loans was similar in magnitude as the negative effect of other types of unsecured (i.e., non-mortgage) debt. Of note, student loans negated the otherwise positive effects of participation in higher education on individuals' psychological well-being and mental functioning.

Conclusions: Student loans and unsecured debt have a similar negative impact on graduates' psychological well-being and mental functioning. From the point of view of mental health, the end (graduate employment) may not justify the means (student loans) that enable individuals to participate in higher education.

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D179

10:00 AM-11:00 AM

EATING DISORDER RECOVERY: A SYSTEMATIC REVIEW OF QUALITATIVE RESEARCH EXAMINING CLIENTS' AND CLINICIANS' PERSPECTIVES

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Despite decades of research, eating disorder recovery continues to be poorly understood empirically (Bardone-Cone et al., 2010). Past studies have mainly focused on eating disorder behaviors (e.g., purging, binge eating) as outcomes for recovery and have not considered an integration of cognitive symptoms, quality of life, and the functional state of the patient ("Recovery", 2008). Moreover, there may be meaningful distinctions between patients' experiences of ED recovery and medical and health professionals' definitions of ED recovery. Qualitative data may contribute unique understandings of definitions and experiences of ED recovery from both clinician and patient perspectives. The aims of this review are 1) to provide a brief overview of ED types and treatment approaches, 2) to review the conceptualization, measurement, and assessment of eating disorders, 3) to highlight the need for a comprehensive definition of ED recovery driven by the integration of patient and provider perspectives to guide subsequent research and treatment models, and lastly, 4) to perform a systematic review of the qualitative literature exploring clients' experiences of recovery from an eating disorder (ED) and clinicians' perspectives on the recovery process. Six distinct themes emerged from the analysis: (1) social support, (2) psychological factors related to recovery (3) importance of professional support/intervention, (4) turning points to recovery, (5) characteristics and definitions of recovery, and (6) environmental factors related to recovery. Implications for conceptualization of ED recovery, design and focus of aftercare treatments, and future directions are discussed.

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10:00 AM-11:00 AM

EXPLORING THE PSYCHOMETRIC PROPERTIES OF THE CESD-10 AND ITS PRACTICALITY IN DETECTING DEPRESSIVE SYMPTOMATOLOGY IN LMICS

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Background: The CESD-10 is known for its good psychometric properties in detecting depressive symptoms; however some researchers question its applicability across various settings. This study explored the factor structure of the CESD-10 in low-and-middle-income countries (LMICs).

Methods: This cross-sectional survey consisted of 16,723 university students across 27 low-and-middle-income countries that completed self-report instruments assessing socio-demographic information and depressive symptoms using the CESD-10. Data analysis included: exploratory factor analysis (EFA), along with the χ^2 goodness-of-fit statistics, root mean square error of approximation (RMSEA) and comparative fit index (CFI).

Results: We found that the two-factor model (depressive affect and positive affect) was the best fit for this population and accounted for 52% of the total observed variance with an internal consistency of $\alpha = .77$ for the depressive affect items and $\alpha = .57$ for positive affect items. While all the countries had acceptable factor loadings ($\lambda > .40$) the scores varied across these two dimensions. Lastly, we found that on average there was a gender difference where females scored higher on the depressive affect domain ($M = 6.65$, $SD = 4.63$; $M = 6.39$, $SD = 4.76$) and males scored higher on the positive affect domain ($M = 2.60$, $SD = 1.81$; $M = 2.38$, $SD = 1.71$).

Limitations: A clinical sample, along with other measures of depression would have been ideal for comparison.

Conclusion: The two-factor model seems most ideal for LMICs with cross-cultural variability, however responses to the items loading onto the positive affect factor should be interpreted with caution.

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10:00 AM-11:00 AM

FORMATIVE EVALUATION OF AN ASSISTED OUTPATIENT TREATMENT PROGRAM IN NM

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We describe the planning, implementation, and formative evaluation of the Doña Ana County Assisted Outpatient Treatment (AOT) program in Southern New Mexico. AOT involves petitioning local courts to order individuals to enter and remain in treatment within the community (SAMHSA, 2017). AOT facilitates the delivery of community-based outpatient mental health treatment services to individuals with SMI. Primary goals include providing access to treatment and related services, assisting patients to function in the local community, and prevention of relapse or deterioration that leads to harm to self or others or a need for hospitalization. New Mexico SB 113 provides the legal statute that guides the Dona Ana AOT program. The Dona Ana AOT program is unique because it the county is host to a large immigrant and multi-cultural population and its mix of urban, semi-urban, and rural communities including colonias.

Eligible individuals include adults 18 or older who have been hospitalized, incarcerated, or detained two or more times in the last 48 months, or who have engaged in violent acts or threats as a result of non-compliance with mental health treatment. The evaluation includes data from direct observation and participation in program planning and implementation, client surveys/interviews, and qualitative interviews with key stakeholders (e.g., case managers, program administrator, clinicians, attorneys, treatment guardians/family members, and the County's 3rd Judicial District Court Judge. The first AOT client was court ordered May 12, 2017, and as of August 8, 2017, 15 individuals are receiving treatment under AOT. Early success has included a multidisciplinary approach to ensure that participants have access to medication, community-based group and individual psychiatric treatment, rehabilitation, transportation, enrollment in public assistance programs and supplemental shelter. Barriers have included, gaps in communication among partnering agencies, misinterpretation of the scope of the grant funds and of SB 113, data sharing from real or perceived HIPAA regulations, housing, treatment team staffing, and re-hospitalizations following court orders.

Overall, it is expected that the formative evaluation will identify the strengths and weaknesses of the Doña Ana AOT program, guide its future development, and serve as a preliminary guide for upcoming AOT intervention sites.

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10:00 AM-11:00 AM

HEART RATE VARIABILITY BIOFEEDBACK: IMPLICATIONS FOR COGNITIVE AND PSYCHIATRIC EFFECTS IN OLDER ADULTS

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Objectives: Two decades of heart rate variability (HRV) biofeedback research have focused on adolescent and adult populations with a variety of symptoms and conditions at the exclusion of older adults. This study explores HRV biofeedback as a novel treatment to decrease anxiety and depressive symptoms in older adults, while simultaneously improving cognitive functioning.

Methods: Participants enrolled in a three-week intervention that included six 30-minute biofeedback sessions. Diaphragmatic breathing techniques and guided muscle relaxation skills were administered during the interventions for participants to achieve coherence. Neuropsychological and psychiatric measures were administered before and after the intervention.

Results: Overall, the intervention was a significant predictor of changes in psychiatric symptoms and cognition with a large effect size. Univariate analyses revealed large effect size decreases in depression ($p < .001$), state anxiety ($p = .007$), and trait anxiety ($p = .002$). A large effect size increase in attentional skills as measured by the Trail Making Test - Part A was seen ($p = .005$). A medium-to-large effect size was witnessed in the task-switching and mental-rule holding skills needed for the Trail Making Test - Part B, but a borderline p-value was found ($p = .05$).

Conclusion: This study suggests that older adults may benefit from HRV biofeedback interventions much like the younger populations that have been studied for decades. Depression, anxiety, and attentional skills were positively affected. Several participants reported improved sleep quality and stress management. Future studies should corroborate these findings.

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10:00 AM-11:00 AM

PREDICTION OF TREATMENT RESPONSE TO EXERCISE IN ADULTS WITH MAJOR DEPRESSIVE DISORDER

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Major depressive disorder (MDD) is a debilitating mental health condition that poses a significant burden to society. Despite the well-established antidepressant benefits of available behavioral treatments, such as aerobic exercise, approximately one-half of all clinically diagnosed individuals fail to remit. Thus, it is critical to assess heterogeneity in treatment response in order to advance individually-tailored prescriptions for MDD. Combining individual patient-level characteristics with neurophysiological measures may help to characterize treatment response at various levels of analysis, and ultimately improve treatment success and remission rates.

Purpose: To identify and characterize behavioral, clinical and neurophysiological markers associated with treatment response to an 8-week exercise program among individuals diagnosed with MDD.

Methods: Young adults ($n=32$; 16 responders) aged 18–25 years currently experiencing a major depressive episode completed neurophysiological (event-related potential [ERP]) and cardiorespiratory fitness assessments before and after an 8-week moderate-intensity aerobic exercise training program. Treatment response was defined as a $\geq 50\%$ reduction in depressive symptoms at post-intervention. Cognitive control (N2, ERN) and reward-related (RewP) ERP components were elicited by a flanker task and simple guessing task, respectively.

Results: At baseline, treatment responders reported higher depressive severity ($p < .05$, $ES = 0.96$) and exhibited lower aerobic fitness ($p < .05$, $ES = 0.13$) relative to nonresponders. Nonresponders exhibited marginally increased changes in aerobic fitness, which was not observed among responders. Changes in cognitive control from pre-to-post intervention emerged ($p < .05$, $ES = 0.33$), such that increased N2 amplitude was observed for responders relative to nonresponders. Interestingly, baseline reward sensitivity as a predictor of treatment response approached significance, such that responders had a larger RewP ($3.9 \pm 3.6 \mu V$) relative to nonresponders ($2.2 \pm 3.4 \mu V$).

Conclusion: These results suggest that there may be a set of moderators and mediators that can be used to help identify specific individuals with MDD who may or may not benefit from exercise. Similar to studies using typical antidepressants (Trivedi et al., 2016), these findings suggest important behavioral, clinical, and biological factors that may predict treatment response to behavioral interventions such as aerobic exercise.

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10:00 AM-11:00 AM

PREGNANCY-SPECIFIC DISTRESS, BUT NOT DEPRESSIVE SYMPTOMS, IS ASSOCIATED WITH EXCLUSIVE BREASTFEEDING STATUS.

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Background: Exclusive breastfeeding (EBF) is recommended for the first 6-months of life and has significant benefits for both infant and mother. Despite this recommendation, most women discontinue breastfeeding or supplement with formula within the first 6-weeks. While postpartum depression and other psychosocial factors play a role, how prenatal psychological factors influence EBF duration remains unclear.

Aim: To investigate the association between pregnancy-specific distress and depressive symptoms assessed in each trimester of pregnancy and EBF status early in the postpartum period.

Methods: Data were available for approximately 400 women with singleton pregnancies from an ongoing longitudinal study conducted in Montreal, QC, Canada. Sociodemographic information, pregnancy characteristics, and psychosocial factors were assessed through online questionnaires in each trimester of pregnancy and at approximately 6–9 weeks postpartum ($M=7.27$, $SD=1.92$). The Prenatal Distress Questionnaire-Revised (PDQ-R) and the Edinburgh Postnatal Depression Scale (EPDS) were used to assess pregnancy-specific distress and depressive symptoms, respectively. EBF status was determined by a postpartum self-report item that asked mothers to indicate the age their infant was first fed formula.

Results: The sample was primarily White, well-educated women who were pregnant with their first child. Approximately 50% ($n=223$) reported EBF at postpartum follow-up. After accounting for the influence of age, ethnicity, education, pre-pregnancy BMI, and parity, greater pregnancy-specific distress in the first ($OR = 0.94$, 95% $CI=0.91-0.99$) and third ($OR = 0.95$, 95% $CI=0.91-0.99$) trimester was associated with a significant reduction in odds of EBF. Prenatal depressive symptoms were not associated with EBF.

Conclusion: Results of these analyses contribute to our understanding of how prenatal psychological factors impact EBF and add to a growing literature that has identified pregnancy-specific distress as a unique construct associated with maternal and infant health outcomes. Our findings suggest that worries and concerns specific to the pregnancy period (e.g., concerns about birth and baby, physical symptoms, and relationships) may be particularly important to consider when designing antenatal interventions to improve EBF duration.

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10:00 AM-11:00 AM

PROSPECTIVE PREDICTION OF DEPRESSIVE SYMPTOMS IN UVEAL MELANOMA PATIENTS

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Background: Diagnosis with uveal melanoma (UM), a rare cancer, presents potential vision loss and life threat. This prospective, longitudinal study interrogated the predictive utility of pre-diagnosis objective and subjective visual impairment, as well as optimism and neuroticism on depressive symptoms in a sample of individuals undergoing diagnostic biopsy for UM.

Method: Adults ($N=299$) completed questionnaires before diagnostic biopsy for UM (T0) and 1 week (T1), 3 months (T2), and 12 months (T3) post-diagnosis. Patients subsequently received a cancer ($n=107$) or non-malignant ($n=192$) diagnosis. Measures were: CES-D (depressive symptoms), MOOD-V (subjective vision), logMAR (visual acuity), LOT-R (optimism), and NEO (neuroticism). Subgroup comparisons of depressive symptoms tested the hypothesis that the cancer subgroup would exhibit more depressive symptoms than the non-cancer subgroup following diagnosis. Multiple linear regressions tested the predictive utility of independent variables. Age and gender were entered as covariates into each regression, and T0 CESD was controlled in T1, T2, and T3 models.

Results: Patients diagnosed with cancer had significantly worse objective ($F=4.45, p<.05$) and subjective ($F=14.08, p<.001$) vision at T0 and higher depressive symptoms than non-cancer patients at T1 ($F=12.94, p<.001$). Diagnosis (after T0; $b=2.83, p<.01$) and T0 optimism ($b=-.31, p<.05$) were associated with T0 depressive symptoms, and neuroticism moderated an association of subjective vision with depressive symptoms at T0 ($b=.11, p<.01$); subjective vision significantly predicted higher depressive symptoms at mean ($b=.11, p<.01$) and high ($b=.18, p<.001$) levels of neuroticism, but not at low levels of neuroticism ($b=.03, p>.05$). T0 neuroticism ($b=3.36, p<.01$) and diagnosis ($b=3.38, p<.01$) significantly predicted depressive symptoms at T1. At T2, an effect of visual acuity on the outcome was moderated by neuroticism ($b=-.18, p<.05$), but simple slopes were not significant. At T3, T0 subjective vision predicted the outcome ($b=-.13, p<.05$) as did the diagnosis x neuroticism interaction ($b=-7.78, p<.01$); higher neuroticism predicted higher depressive symptoms in non-cancer patients ($b=4.63, p<.01$) but not cancer patients ($b=-3.13, p>.05$).

Conclusion: Pre-diagnosis personality and vision variables significantly predicted depressive symptoms across one year after UM diagnosis. Even prior to UM diagnosis, factors that potentially confer risk for depressive symptoms can be identified.

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10:00 AM-11:00 AM

PSYCHOMETRIC PROPERTIES OF THE CHINESE SELF-COMPASSION SCALE AND ITS SHORT-FORM: INSIGHTS ON PATHWAYS TO MENTAL WELL-BEING

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Background: Self-compassion is receiving increasing research attention. There is lack of consensus on a paucity of psychometrically robust measures of self-compassion. The only self-report measurement of self-compassion is the Self-Compassion Scale developed by Neff (2003). Existing validation studies showed diverged opinions on its psychometric structure. Neff (2003) proposed a 6-factor structure with a composite score; while López et al. (2015) proposed a two-factor model, formed by the positively and negative formulated items respectively. The current study examines the factor structure, reliability, and construct validity of the SCS and its short-form in a community sample.

Methods: Two independent samples of 455 and 292 Chinese adults were recruited via convenience sampling. In addition to the Chinese SCS, the first sample completed a battery of mental health measures. Factor structure of the SCS and SCS-SF were evaluated using confirmatory factor analyses. Convergent and divergent validity of the SCS were examined via the relationships of the SCS factors with covariates and mental health measures in a path analysis.

Results: The 6-factor correlated model and the 6-factor model with 2 higher-order factors provided adequate fit to the SCS and cross-validated well in an independent sample. The two higher-order factors of the positively formulated “Self-Compassionate Behaviors” and the negatively formulated “Self-Uncompassionate Behaviors” showed good internal consistency and test-retest reliability. The factor “Self-Compassionate Behaviors” significantly predicted hope, perspective taking, empathic concern, and positive affect while the “Self-Uncompassionate Behaviors” factor significantly predicted personal distress, anxiety, depression, general health problems, and negative affect. For the SCS-SF, the 2-factor correlated model but not the 1-factor model was found to provide a good fit in terms of model fit and parsimony.

Conclusion: This is the first study to assess the factor structure of the Self-Compassion Scale in the non-Western world, utilizing a non-clinical community sample. The present study suggested a two second-order factor structure for the Self-Compassion and its short-form. The structure with the best fit was comprised of the six first-order factors, and two second-order factors of “Self-Compassionate Behaviors” and “Self -Uncompassionate Behaviors”, with distinct pattern of correlations with other psychological measures. The findings were consistent with evidence in neuroscience suggesting that the default threat-defense system and the self-soothing system are two separate systems in mood regulation. Such differentiation would allow the SCS to be adopted as both an assessment of strengths and vulnerabilities to well-being.

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10:00 AM-11:00 AM

RACIAL DIFFERENCES IN THE ROLE OF RELIGION AND SPIRITUALITY ON DECISIONS TO USE BEHAVIORAL HEALTH TREATMENT

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Individuals from racial and ethnic groups often use behavioral health (BH) treatments less frequently than European Americans. One possible explanation for this lack of seeking BH treatment is due to cultural factors such as religious beliefs. Researchers have deduced that for the African American community, religious leaders often serve as first responders to mental health issues and spirituality impacts treatment seeking among the Latino populations (e.g., Neighbors et al., 1998; Oppenheimer et al., 2004; Payne, 2009).

The purpose of the current study was to examine the role of religion and spirituality on decisions to seek BH treatment across ethnic groups (i.e., African American, European American, and Latinos). Participants were 112 young adults who self-identified as Black, White, or Latino. The sample included 75% female, 62% Latino, 23% Black, and 12% White. 89% were single and 63% self-identified as Christian (5% did not believe in religious affiliation). Ages ranged from 18 to 55 years old. The mean age was 22.60 (SD = 6.45). Participants completed the following measures: *Demographic Information Questionnaire*, developed for the present study, the Duke Religion Index (Koenig, Parkerson, & Meador, 1997), and the Spiritual Meaning Scale (SMS; Mascaro, Rosen, & Morey, 2004).

Results indicated that participants decisions differed based on their spirituality and religious practices [$F(2,107) = 4.95, p = .009, R^2 = .086$]. Specifically, strong spiritual beliefs was a significant predictor of not seeking behavioral health treatment [$t(107) = -2.73, p = .007, \beta = -.018, SE = .007$]. Furthermore, racial differences were noted in spirituality and religious practices among Black, White, and Latino college students. The main effect was significant [$F(2,108) = 3.52, p = 0.008, \eta_p^2 = .061$]. However, univariate analyses indicated a significant effect for religious practices [$F(2,109) = 6.25, p = 0.003, \eta_p^2 = .103$] and *not* spirituality [$F(2,109) = 2.50, p = 0.086, \eta_p^2 = .04$]. The data indicated that Black participants reported the strongest spiritual beliefs and engaging in more religious practices than the other racial groups. Furthermore, no differences in religious practices were found between Latino and White participants. Our study found that difference exist in spiritual beliefs and religious practices across ethnic groups. It appears that these variable may partially explain disparities in behavioral health treatment. Specifically, participants who reported stronger spiritual beliefs were less likely to seek behavioral health treatment. Implications and future directions for behavioral health providers will be discussed.

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D188

10:00 AM-11:00 AM

THE EFFECTS OF SEXUAL ORIENTATION OUTNESS ON DEPRESSION, ALCOHOL, AND MARIJUANA USE AMONG LESBIAN AND BISEXUAL WOMEN

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Previous research has shown that bisexual women have poorer health outcomes than lesbian women, including anxiety, depression, and substance use. Additionally, the health benefits of sexual orientation disclosure have previously appeared robust. Theories such as Meyer's (2003) minority stress model offer an explanatory framework for the positive outcomes observed in sexual orientation disclosure. However, the majority of past studies have combined lesbian, gay, and bisexual (LGB) participants instead of examining differences across subgroups. It is unclear whether the positive benefits of sexual orientation outness generalize to the entire LGB community.

The present study examined differences between the role of sexual orientation disclosure on alcohol use, marijuana use, and depression among lesbian and bisexual women at a Gay Pride festival in 2015. The Outness Inventory (OI, Mohr & Fassinger, 2000) was used to assess the degree of openness about one's sexual orientation to others, such as friends, coworkers, and healthcare providers. A shortened subscale of the Center for Epidemiologic Studies Depression Scale (CES-D) was used to measure depression (Radloff, 1977). To assess past year substance use, participants were asked how often they had consumed marijuana and were given the AUDIT-C (Kush et al., 1998) to assess alcohol consumption.

After controlling for demographics, bisexual women had higher marijuana use than lesbian women, $F(1,120) = 6.85, p = .01$, which was consistent with past research. Interestingly, outness was not a significant predictor of marijuana use and did not interact with sexual orientation, $ps > .15$. Alcohol use was marginally predicted by outness, in that more outness led to higher rates of alcohol consumption, $F(1,122) = 3.0, p = .08$. Sexual orientation did not predict alcohol consumption, $p = .3$. Lastly, sexual orientation interacted with outness to predict depression levels: lesbians who were more out had significantly lower levels of depression, but bisexual women did not show this pattern, $F(2,122) = 4.35, p < .001$. This finding suggests that the previously robust finding on the positive benefits of outness could be limited to specific groups or specific health outcomes. Future research needs to address the unique experiences of bisexual women instead of combining these groups. Additionally, bisexual mental health should be a major focus for future research on prevention and intervention efforts within the LGB community.

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D189

10:00 AM-11:00 AM

THE MULTI-FACETED EFFECTS OF ACCEPTANCE-BASED BEHAVIORAL TREATMENT ON WEIGHT, DEPRESSION, EMOTIONAL EATING & QUALITY OF LIFE

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Introduction: Acceptance-based behavioral treatment (ABT) for obesity shows promise for improving weight loss compared to standard behavioral treatment (SBT). Given ABT's aim to promote adherence to behavioral changes for weight loss, it is possible that ABT could also have a positive impact on other components that often coexist with obesity. As such, we examined the effect of ABT on depression, emotional eating, and quality of life, when controlling for weight loss.

Methods: Participants ($n = 190$) were randomized to 25 sessions of ABT or SBT over 1 year. Weight and self-reports of depression, emotional eating, and quality of life were assessed at baseline, mid-treatment (6 months), post-treatment (12 months) and 1 year follow up (24 months).

Results: Relative to SBT, participants in ABT showed greater reductions in emotional eating ($p = 0.03$) and quality of life ($p = 0.04$). When controlling for weight loss, participants who received ABT showed higher results in quality of life than those who had SBT ($p = 0.02$). Those who received ABT did not show significantly reduced depression scores than those who received SBT.

Conclusions: These results may indicate that in addition to weight loss, ABT also impacts emotional eating and quality of life. It may be the case that ABT helps improve emotional eating and quality of life in those who are obese and desire to lose weight. Therefore, it would be worthwhile to further investigate the benefits of ABT above and beyond weight loss in obese populations.

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D190

10:00 AM-11:00 AM

UNDERSTANDING THE IMPACT OF ALEXITHYMIA ON ORGAN TRANSPLANT CANDIDATES' QUALITY OF LIFE AND THE ROLE OF DEPRESSION

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Solid organ transplant candidates who display alexithymia, a cognitive and affective deficit in an individual's ability to experience and identify emotions, also report psychological distress, lower quality of life (QOL) and noncompliance with medical recommendations. This study sought to examine the mediating role of depression on the relationship between alexithymia and QOL. The study also compared two measures of depression; the Brief Symptom Inventory-18 (BSI-18) and the depression dimension of the abbreviated Minnesota Multiphasic Personality Inventory-2 (MMPI-2) for identifying the relationship between depression and QOL. Using a sample of 707 patients who sought a pre-transplant psychosocial evaluation for liver, kidney, heart and lung transplant, findings revealed that depression partially mediated the relationship between alexithymia and QOL. This relationship was evident for psychological QOL with both the BSI-18 and MMPI-2 but differed for physical QOL, with depression measured by the BSI-18 as the only significant mediator of the relationship between alexithymia and physical QOL. These results indicate that transplant candidates with higher levels of alexithymia who report poor QOL may be depressed. Implications for the utility of using BSI-18 or the MMPI-2 for assessing depressive symptoms among patients under consideration for solid organ transplant are discussed.

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10:00 AM-11:00 AM

USING ITEM RESPONSE THEORY TO ASSESS PSYCHOMETRIC PROPERTIES OF THE FIVE FACET MINDFULNESS QUESTIONNAIRE IN A DIVERSE SAMPLE.

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Objective. Increasing evidence indicates that mindfulness is associated with improved well-being among individuals with psychological disorders and chronic diseases. The widespread interest in mindfulness emphasizes the need for psychometrically sound mindfulness measures. The Five Facet Mindfulness Questionnaire (FFMQ) is a widely used self-report measure of trait mindfulness. However, extant psychometric evaluations of the FFMQ have been conducted in primarily White respondents and have relied exclusively on classical test theory methods. Item response theory (IRT) approaches are recommended for the refinement and development of instruments that measure psychological functioning and have not been reported for the FFMQ. To address these limitations, we administered the FFMQ to a diverse sample and analyzed the data using IRT methods.

Methods. This study evaluates the reliability and validity of the FFMQ in a racially and ethnically heterogeneous sample ($n = 240$) using IRT methodology. The sample was pooled across two studies and included an online sample (Sample 1) and baseline data from participants in an intervention study (Sample 2). Results did not differ when analyzing studies separately. The pooled sample was: 51.3% non-Hispanic White; 27.5% non-Hispanic Black, 7.6% Hispanic, and 13.6% Other.

Results. Reliabilities were ≥ 0.82 for the 5 sub-scales: observing (0.82), nonreactivity (0.82), acting with awareness (0.90), nonjudging (0.91), and describing (0.93). Classical test theory (simple-summed scoring) and IRT scores estimated using the graded response model correlated 0.98 to 0.99 with one another. Product-moment correlations among IRT scores for the 5 sub-scales ranged from 0.10 to 0.39, indicating substantial unique variance. IRT scores were also similarly correlated with outcomes when compared with simple summed scoring. The FFMQ scales correlated significantly with depression, rumination, perceived stress, emotional intelligence, and emotion regulation reappraisal.

Conclusions. This study provides support for the reliability and validity of the FFMQ in a racially and ethnically heterogeneous sample. This study also suggests that classical test theory scores for the FFMQ are similar to IRT scores. Future studies with larger sample sizes are needed to replicate these findings and to compare performance of the FFMQ using IRT methods within unique racial and ethnic groups. This is a particularly important area of exploration given divergent operationalizations of mindfulness across the literature, which may be influenced by sociocultural contexts.

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10:00 AM-11:00 AM

AGE AND EMOTION DYSREGULATION DISTINGUISH RESPONSIVENESS TO NEGATIVE MOOD INDUCTION PROCEDURES

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Background: Though mood induction procedures (MIP) are a common way to study emotion and behavior in psychological research, we know little about factors associated with non-response to MIP. Identifying the characteristics that differentiate non-responders from responders may illustrate how inadvertently excluding non-responders introduces threats to external validity. Though research suggests that older adults are more effective at emotion regulation than younger adults, the impact of age and emotion regulation on response to MIP is unknown. This secondary data analysis aimed to explore whether responders and non-responders differ on demographic variables and emotional regulation.

Methods: Participants ($N=110$; 68% female, 18–63 years old) were recruited for an emotional eating study that required responsiveness to anger and anxiety mood inductions (i.e., at least a 4-point increase on the Profile of Mood States subscale for anxiety or anger, depending on the mood induction) as part of the eligibility criteria. During the screening session, participants underwent anxiety and anger MIP; nearly half ($n=49$) of the initially eligible participants were deemed ineligible solely due to non-response to the anxiety or anger MIP. Age, sex, ethnicity, body mass index category (lean, obese), and the emotion dysregulation subscale of the Eating Disorder Inventory-3 were examined for responders and non-responders. The sample size varied for the non-responders due to missing data, and separate analyses were conducted per variable.

Results: Non-responders ($M=43.24$, $SD=11.58$) were significantly older than responders ($M=34.61$, $SD=11.37$), $t(97)=3.65$, $p<.001$, $M_{\text{difference}}=8.63$, 95% bias-corrected and accelerated CI [4.54, 13.19]. Non-responders ($M=1.62$, $SD=1.39$) also scored significantly lower on emotion dysregulation compared to the responders ($M=3.02$, $SD=3.48$), $F(1, 49.75)=5.35$, $p=.025$. No other variables differentiated non-responders and responders.

Discussion: Participants who failed to respond to either the anxiety or anger MIP were significantly older and reported more effective emotional regulation compared to MIP responders. MIP studies may underrepresent people effective in emotion regulation, which limits the variance of emotion regulation abilities and generalizability of findings in MIP studies. Since only one type of MIP was utilized in the study, future research should examine age and emotion regulation differences between responders and non-responders in various forms of anxiety and anger MIP.

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D193

10:00 AM-11:00 AM

BASELINE RESEARCH LITERACY IS LOW AMONG YOUNG ADULTS IN A BEHAVIORAL RANDOMIZED TRIAL

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Background: Participants' research literacy is essential for engagement in clinical trials, but rarely assessed. In our prior work, only two-thirds of adults in a Mechanical Turk online sample correctly answered a knowledge question about how study dropouts distort study conclusions, $n=174$, 67% (CI 59%-74%). To date, it is unknown whether this surprisingly low knowledge level generalizes to actual clinical trial participants.

Objective: We assessed participants' baseline knowledge about the impact of dropouts on study conclusions as well as four other key constructs among 1662 young adults (21–30 years old) enrolled in MENU Gen Y, an online behavioral intervention randomized trial to improve fruit and vegetable intake.

Methods: In the trial's baseline survey, knowledge was assessed with a single-item question describing a hypothetical scenario, and four constructs (perceived value of retention, trust of the research organization, perceived value of study outcome, and perceived value of keeping commitments) were assessed with 5-point scales from 1–5 with response options (not at all, a little bit, moderately, quite a bit, extremely). Almost 69% were women, 79% were from a White racial/ethnic background, and 56% had a bachelor's degree or higher.

Results: Only 61% (CI 58%-63%) of trial participants correctly answered how study dropouts affect study conclusions. Participants rated perceived values highly, including for retention (importance of filling out the trial's follow-up surveys), $M=4.1$ (CI 4.1–4.2); trust in the research organization, $M=4.0$ (CI 3.9–4.0); value for study outcome (importance of eating more fruits and vegetables), $M=4.1$ (CI 4.0–4.1), and keeping commitments, $M=4.4$ (CI 4.4–4.4). Post-hoc analyses revealed racial/ethnic and educational disparities in knowledge, but not perceived values. Participants from a White background correctly answered the knowledge question more than those from racial/ethnic backgrounds other than White, 64% (CI 62%-67%) vs 47% (CI 42%-53%). Participants with a bachelor's degree or higher correctly answered more than those without a bachelor's degree, 66% (CI 63%-69%) vs 54% (CI 50%-58%).

Conclusions: Only a little over half of young adults in an online behavioral randomized clinical trial correctly answered a knowledge question about research literacy. Future studies should experimentally test innovative strategies to improve research literacy, especially to reduce racial/ethnic and educational disparities.

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10:00 AM-11:00 AM

CHARACTERIZING EMPLOYMENT OF COLORECTAL CANCER SURVIVORS USING ELECTRONIC MEDICAL RECORDS

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Background: Assessing changes to employment following cancer diagnosis is imperative, as cancer survivors may experience treatment-related outcomes that can impede return to work. However, collection of employment information is not required by health systems, thus data may be sparse. We describe an approach to using multiple sources of electronic health record (EHR)-based data to characterize CRC survivors' employment status and industry.

Methods: We obtained data from adults aged 18–70, enrolled in one of two health systems, and diagnosed with colorectal cancer (CRC) between 2010–2014 ($n=1107$). A mixed-methods approach was used to categorize EHR data from multiple sources into employment status and industry. Employment status was available via the EHR as: full-time, part-time, self-employed, not employed, full-time student, part-time student, retired, on active military duty, and unknown. For employment industry, we employed a multi-pronged approach using data on: (1) health plan subscriber status (primary vs. dependent); (2) health plan group (e.g., employer or organization that provides health coverage); (3) North American Industry Classification System (NAICS) codes; and (4) Standard Industrial Classification (SIC) codes. For primary subscribers, health plan group was mapped to NAICS codes and categorized into one of twenty employment industry sectors. SIC codes were converted to NAICS codes using a crosswalk from census.gov. For dependents, we used data from three open-text EHR fields with information on employment and occupation history. A qualitative analyst assessed the open-text data and categorized it into industry (using NAICS-based industry sectors). Descriptive statistics were used to characterize the demographic, employment, and cancer characteristics of CRC survivors.

Results: Among CRC survivors, 78% were primary subscribers and 22% were dependents. We characterized employment status for 56% of primary subscribers and 66% of dependents, as well as employment industry for 50% of primary subscribers' and 31% of dependents. Overall, 31% were employed, with the most common industries being public administration, finance/insurance, and educational services.

Conclusion: Leveraging existing EHR-based data to identify employment characteristics is essential for developing studies to assess employment outcomes among cancer survivors. Our results underscore the lack of existing employment data and describe a method to use EHR-based employment data in research.

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10:00 AM-11:00 AM

COMPARING THE EFFECTIVENESS OF FOOD CRAVING INDUCTION TECHNIQUES: ARE GIFS BEST?

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A food craving is described as an intense desire to consume a particular food or drink. Food cravings are quite common, with the vast majority of adults experiencing them regularly. Regular or intense food cravings can lead to overeating, in turn interfering with weight loss efforts. In order to better understand ways to reduce food cravings, a reliable method of inducing food cravings in the laboratory is first needed. To date, common craving induction techniques have utilized writing, imagery, or exposure to static images of food. Though studies have examined the utility of these techniques independently, few studies have directly compared the effectiveness of these techniques. Additionally, no studies to date have examined the utility of food-related Graphics Interchange Format (GIFs), an image in motion that has become widely used in social media, in inducing cravings. This study aimed to: 1) directly compare the effectiveness of four different craving induction techniques (Imagery, Writing, Static Image, GIF Image), and 2) to explore whether exposure to food GIFs successfully induce food cravings. Participants consisted of 75 undergraduates who completed the General Food Craving Questionnaire - State Version (G-FCQ-S; Nijs et al., 2006) prior to undergoing one of four craving induction techniques for five minutes: the Writing group wrote about a time that they ate their favorite food, the Imagery group imagined the last time they ate their favorite food, the Static image group viewed a slideshow of 36 static images of commonly craved foods, and the GIF image group viewed a slideshow of the same 36 images but in GIF format. Afterward, participants' cravings were again measured. A repeated measures ANOVA found that participants across all four conditions reported increases in cravings following the induction, $F(1, 69) = 26.289, p < .01$. The full scale craving score did not differ significantly across the four groups ($p > .05$). However, there were significant differences between groups in the Hunger subscale of the G-FCQ-S, $F(1, 71) = 17.460, p < .01$. A Bonferroni post-hoc test indicated that the Static Image and GIF Image groups reported higher levels of hunger compared to the Imagery group, p 's $< .05$. These findings suggest that while all of the tested craving induction techniques were equally effective in inducing cravings overall, viewing static and GIF images of food may have a stronger effect in stimulating hunger in participants.

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10:00 AM-11:00 AM

DIAGNOSTIC PREDICTIONS OF HEART-FOCUSED ANXIETY: A LATENT PROFILE ANALYSIS OF THE CARDIAC ANXIETY QUESTIONNAIRE

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The Cardiac Anxiety Questionnaire (CAQ) was developed to assess heart focused anxiety (HFA), a construct characterized by the distinct fear of cardiac related sensations. The 18-item measure is a reliable and valid instrument for the assessment of HFA in chest pain of cardiac and non-cardiac origins with similar levels of distress observed in both samples (Eifert, 2000).

Chest pain in the absence of cardiac pathology, referred to in the literature as non-cardiac chest pain (NCCP), results in recurrent healthcare utilization posing a financial burden on hospital systems (Mourad et al., 2013). Several empirical studies have demonstrated distinct differences between the groups, including higher levels of attention to heart related sensations among NCCP (Carmin et al., 2003). Such findings provide support for the perpetuating role of HFA and co-occurring interoceptive sensitivity in the maintenance of NCCP.

Regarding CAQ comparisons of NCCP and cardiac chest pain, less is known about the discriminative properties of the measure, or the ability to predict whether the symptoms are occurring in the absence of organic cardiac pathology. Given the function of HFA in NCCP, it is hypothesized that item profiles can be utilized to facilitate diagnostic predictions. The current study applied latent profile analysis to CAQ responses of 658 participants undergoing electron beam tomography scanning. Cardiac chest pain was defined by coronary artery calcium (CAC) levels, a marker for coronary heart disease.

A two-profile model to test the hypothesized connection between high HFA and NCCP was analyzed. Profile 2 demonstrated higher averages of all CAQ items and is considered the high HFA profile. Profiles were then compared to the imaging results to test the predictive properties of the classifications. 178 of the 419 patients in Profile 1 had normal CAC levels (sensitivity of 60%). 79 of the 239 patients in Profile 2, the profile hypothesized to coincide with NCCP, had abnormal CAC scans (specificity of 31%).

The current analysis did not evidence strong diagnostic predictive ability between groups based on total CAQ latent profiles. The literature has supported a four-factor structure of the CAQ. These factors will be considered, in the next step, as latent indicators to improve specificity and increase utility of the CAQ as a screening instrument in chest pain populations. Future analyses will also include cardiac risk factors to explore low risk, high HFA profiles.

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10:00 AM-11:00 AM

DOES LEVEL OF SPECIFICITY IMPACT MEASURES OF MOTIVATION TO COMPLY? A RANDOMIZED CONTROLLED TRIAL

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The Theory of Planned Behavior is a popular value-expectancy model in social and behavioral health. Motivation to comply, one of the theory's constructs, has been not been well operationalized and measured in the past, and to date, there has been no assessment of whether level of specificity impacts the evaluation of the construct. Purpose of this study was to evaluate motivation to comply measurements across 4 domains (from general to TACT-behavior specific) and evaluate the potential impact the differences have on injunctive norm belief strength when identifying determinants of generalized injunctive norms. Students (n=234) attending a large southwestern university completed a TPB survey related to sleep and physical activity, and for each behavior, intentions, generalized injunctive norms, injunctive normative belief strength, and a motivation to comply was evaluated. Participants were randomized to one of four domains that measured motivation to comply [general domain (n=58); Health domain (n=60); Behavioral domain (n=56); TACT domain (n=60)]. Results from this study showed that for generalized injunctive norms, the expectancy-only-based determinants were significantly better correlated for a majority of cases (10 of 12 physical activity referents and 5 of 12 sleep referents), compared to the value-expectancy measurement approach. Across both behaviors, motivation to comply measurements did not appear to be impacted by changing the level of specificity. Referents for sleep and physical activity were mostly significant, but the effects were small to medium. Future researchers should consider dropping these measures to reduce respondent burden, or find alternative ways of measuring these constructs.

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10:00 AM-11:00 AM

EXAMINING ANXIETY AND FEAR RESPONSES DURING EXPOSURE TO A DIGITAL BLOOD DRAW PARADIGM

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Fear of blood and needles comprise central barriers to blood donation and blood draws within healthcare settings. Considerable evidence suggests that in-vivo exposure to feared experiences such as blood draws is among the most effective means of intervention for those with blood and needle phobia. A previous proof-of-concept study provided initial validation of a digital blood-draw paradigm as a potential platform for graded-exposure treatment for people with blood and needle fear. The paradigm derives from the "rubber arm" phenomenon and pairs footage of a human arm undergoing a blood draw with tactile stimuli delivered to the participant's own arm, thus generating a sense of "ownership" of the digital arm. Although significant changes in physiological arousal have been noted in response to the paradigm, studies have not yet examined the pattern of fear/anxiety responses or extinction of such responses over the course of the exposure sequence. Understanding such patterns of response is important to further validate the utility of the paradigm as a means to facilitate exposure. As part of the current study, healthy college students received two successive inductions of the digital blood draw paradigm. Participants completed a standard measure of state anxiety, as well as measures assessing fear of blood and needles and elements of blood donation experience. Participants also rated their current fear and anxiety prior to and following each exposure sequence. Finally, participants were prompted to rate fear and anxiety at successive phases of the blood draw sequence. In line with previous studies, manipulation checks indicated that the digital arm paradigm successfully produced a realistic illusion that blood was being drawn from the participant's own arm. Repeated-measures analyses indicated that, over the course of a single blood draw simulation, participants' fear and anxiety were most elevated during introduction of the needle and subsequent blood draw ($p < .05$). Across successive exposure sequences, participants showed a pattern of progressively declining anxiety and fear ratings ($p < .01$). Finally, measures specific to fear of blood and needle stimuli, rather than general measures of anxiety, were associated with fear and anxiety ratings both within and across the exposure sequence. The current results provide further support for the digital blood donation paradigm and suggest avenues for future inquiry and application.

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10:00 AM-11:00 AM

MEDIATIONAL INFLUENCE OF SIGNIFICANT OTHERS ON COLLEGE-AGED STUDENTS' DISTRACTED DRIVING BEHAVIORS

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Introduction: Texting while driving is prevalent among college-aged students despite distracted driving laws. Social Norms Theory suggests that individual behaviors are influenced often times by perceptions of how their social groups act. Proximal sources of social influence, such as significant others (S.O.) may be more likely to effect college-aged students. We investigated whether perceived S.O. texting behaviors mediate perceived risk of texting while driving and past month texting while driving behaviors among college-aged students.

Method: A total of 861 undergraduates at a large, suburban, East Coast University in the Washington, D.C., metropolitan area participated in an anonymous web-based survey that measured their driving behaviors, perceptions, and questions about their social network and its influence on their driving. Our analysis included 835 undergraduates, who were licensed drivers and usually drove a car or other motor vehicle. We examined the influence of perceived risk of texting while driving on texting while driving in the past month, and whether seeing ones S.O. texting while driving mediated this effect. The sample was analyzed in two groups: low-risk drivers and high-risk drivers. Low-risk drivers never received a traffic citation nor got into a crash. High-risk drivers had ever received traffic citation or got into a crash. A series of logistic regressions were conducted to test the mediation effect, adjusting for gender and race/ethnicity. Sobel Tests were conducted to evaluate the indirect effect.

Results: Results showed that the influence of S.O. partially mediated the effect of perceived risk of texting while driving on past month texting while driving. Sobel tests for participants who were low-risk drivers showed that the effect of texting while driving in the past month was mediated by the influence of S.O. ($t=2.24$, $p < 0.05$). Participants who were high risk drivers were also partially mediated by perceived influence of their S.O. ($t=2.03$, $p < 0.05$).

Conclusions: We found that perception of S.O. texting while driving partially mediated the effect between perceived risk of texting and driving and past month texting and driving behaviors among both low-risk and high-risk college-aged drivers. These findings bolster the limited research on the importance of proximal sources of social influence. These findings suggest prevention efforts focus on proximal social networks of college-aged students as opposed to distal social influences when targeting young adults distracted driving behaviors, and intervention strategies be tailored towards texting while driving.

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D200

10:00 AM-11:00 AM

QUALITATIVE ANALYSIS OF OUR VOICE DISCOVERY TOOL DATA USING NVIVO TO CAPTURE RESIDENTS' PERCEPTIONS OF LOCAL WALKABILITY

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Marginalized communities typically have limited access to places that facilitate walking and other physical activities that can reduce chronic disease risk. One emerging approach to fostering more walkable neighborhoods is to empower residents themselves to collect relevant data and build consensus with local decision makers around realistic environment and policy changes that can promote walkability. In one multi-site project, residents used a mobile application (The Discovery Tool) to systematically capture audio narratives depicting aspects of their neighborhood that facilitated or hindered walkability. As the residents used their data to drive community improvements, the Discovery Tool research team has used the data to better understand US regional differences in walkability. We describe the application of NVivo, a qualitative data software program, to analyze 28 Discovery Tool neighborhood walks that involved 57 young to middle-aged adult participants from 7 different US cities. Together, participants collected 129 geocoded audio narratives using the application. NVivo was used to code the data using three levels of analyses: location, facilitator/barrier, and walkability. The NVivo software facilitates display of useful visualizations of the auditory data that helped clarify which factors most contributed to, or detracted from, walkability in different locales, including: hierarchy charts, word frequencies, word clouds, word trees captured from the audio narratives, and visual distributions of neighborhood features identified from the different regions. Future work will aim to optimize the process of using the Discovery Tool application and NVivo to more fully understand the qualitative data collected by residents. This type of visually compelling data analysis can help community leaders and researchers better understand local resident health issues and perspectives, and the best methods for summarizing and communicating them.

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D201

10:00 AM-11:00 AM

ATTRITION IN LONGITUDINAL RESEARCH WITH FITBITS

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Introduction: Exercise is widely known to have extensive health benefits, but it is difficult for researchers to obtain longitudinal biometric measurements of activity. Fitbits are a good indicator of physical activity which could potentially aid health care professionals in better assessment of patients' needs (Diaz, et.al., 2015). Fitbit and the web-based tracking that accompanies its use are preferred and lead to a greater increase in physical activity compared to standard pedometers (Cadmus-Bertram, Marcus, Patterson, Parker, & Morey, 2015). However, despite incentives and reminders, attrition in studies has been high (e.g., Hartman, et. al., 2016). The current study investigates reasons for attrition in the context of a longitudinal study using Fitbits.

Method: Fitbits were provided to nineteen female college students for a nine-month study of health behaviors in which they were asked to wear the Fitbit at least 5 days per week. Participants were entered into a drawing for a \$25 Amazon Gift Card as an incentive for completion of the study. Fitbit data was monitored weekly, and participants were contacted if they did not sync their Fitbit to inquire about their continued engagement in the study. Participants were interviewed at the end of the study regarding difficulties in completion of the study or their reasons for withdrawing.

Results: Of the initial 19 participants, 10 maintained engagement in the study to completion. Selective attrition for more physically active participants was evaluated using a Mann-Whitney U test. Results indicate a significant difference in the average biweekly step count of people who completed the study compared to those that withdrew ($U = 901, p = .026$) such that participants who were less physically active were more likely to withdraw. Participants' qualitative responses reveal that difficulties were largely due to trouble syncing and remembering to charge or wear the Fitbit. Further, many participants cited no problems using their device consistently, perhaps reflecting a lack of awareness of their behavior.

Conclusion: This study shows that technical difficulties, remembering to use the device, and engagement in exercise impact participation in studies involving longitudinal Fitbit use. The sample size of this study limits the conclusions which can be drawn but does provide initial exploration of the topic. Future research should consider how to better prompt continued participation and earlier resolve technical concerns.

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D202

10:00 AM-11:00 AM

CONFIRMATORY FACTOR ANALYSIS OF THE EATING DISORDER EXAMINATION QUESTIONNAIRE IN VEGANS AND OMNIVORES

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Introduction. The Eating Disorder Examination Questionnaire (EDE-Q) has been shown to be a valid and reliable measure of eating-related pathology; however, the original four-factor structure has been proven difficult to replicate in diverse samples of respondents. The main purpose of this study was to compare goodness-of-fit of five alternative models of the EDE-Q in a sample of vegans recruited from the community (i.e., individuals refraining from all animal products, $n = 395$; mean age = 31.72 ± 12.63 ; 82% female) and undergraduate omnivores (i.e., individuals not restricting intake of animal products, $n = 207$; mean age = 18.86 ± 1.96 ; 62.7% female).

Methods. Participants completed the EDE-Q, along with a battery of self-report measures. Demographics were compared in a series of ANOVA and chi-square. Confirmatory factor analysis was used to compare fit indices of the original four-factor model of the EDE-Q, along with three-, two-, full one-, and brief one-factor models.

Results. Groups did not differ in BMI ($p > .05$). Vegans were more likely to be older, White, female, and scored lower on the restraint subscale of the EDE-Q (all $p < .05$), which is in line with past work. Internal consistency ranged from .83 to .94 in omnivores and .81 to .94 in vegans. Error terms were high, and across samples subscales were all highly correlated. The brief one-factor model was the closest to being acceptable in omnivores [$\chi^2(df) = 134.71(20)$; $p < .001$; RMSEA = .17; GFI = .87; AGFI = .77; NNFI = .87; SRMR = .04; CFI = .91], but did not perform as well in vegans [$\chi^2(df) = 486.40(20)$; $p < .001$; RMSEA = .27; GFI = .77; AGFI = .59; NNFI = .73; SRMR = .06; CFI = .91]. The four-factor model was the next best fit in both omnivores [$\chi^2(df) = 806.49(202)$; $p < .001$; RMSEA = .12; GFI = .71; AGFI = .64; NNFI = .77; SRMR = .08; CFI = .80] and vegans [$\chi^2(df) = 1389.37(202)$; $p < .001$; RMSEA = .14; GFI = .72; AGFI = .66; NNFI = .74; SRMR = .08; CFI = .77], though a Haywood case was observed in both samples and therefore the results were rendered uninterpretable. The three-, two- and full one-factor model were all far from providing adequate fit to the data.

Discussion. Our data confirm difficulties in replicating the proposed factor structure of the EDE-Q, including in vegan respondents. More research is therefore needed to determine the suitability of the EDE-Q for quantifying eating behaviors in those abstaining from animal products.

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D203

10:00 AM-11:00 AM

EXPLORING GENDER EXPRESSION MEASUREMENT AMONG GENDER MINORITIES

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Background: While best practices for gender identity data collection are beginning to emerge, little has been done to capture gender expression. Gender expression- how one expresses their gender identity through appearance and behavior- is an important construct for better understanding gender minority experiences, especially related to discrimination and health correlates. Discrimination is often based on outward appearances, and is linked to health-seeking behavior, access and quality of care. This study explores gender expression among gender minority individuals in an effort to build a measurable conceptual model of expression.

Methods: Utilizing targeted ethnography, we conducted 41 semi-structured key-informant interviews with gender minority individuals throughout the USA. Interviews queried gender expression experiences and goals, how these change in various settings and over time, and how respondents identified their gender expression being perceived by others. Interviews were audio recorded and transcribed. Data was coded and analyzed for key themes using NVIVO 11.

Results: Respondents discussed expressing gender through 1) visual markers (clothing, hairstyles, make-up, adornment); 2) physical changes through medical interventions (hormones and surgeries); and 3) behavioral means (mannerisms, hobbies, sexual behavior). Respondents reported changes in gender expression over time and setting, frequently attributed to safety and discrimination concerns. Respondents reported minimal experiences being queried about gender expression in previous data collection activities.

Conclusions: As no standard means of measuring gender expression currently exist, this data offers a preliminary conceptual framework that can serve as the basis for survey item development. Such a measure could help understand discrimination and its health correlates. More research on cisgender experiences is necessary to develop a conceptual model that can work for people of all genders.

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D204

10:00 AM-11:00 AM

EXPLORING QUANTITATIVE APPROACHES TO EXAMINING THE EFFECT OF MULTIPLE DISADVANTAGED SOCIAL STATUS INDICATORS ON HEALTH

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Individuals possess multiple characteristics and related social identities that may render them vulnerable to discrimination. To understand how social status factors influence health, competing theoretical approaches such as “double jeopardy” and “intersectionality” have variously proposed additive (i.e., adding the relative contribution of predictors using main effects) and multiplicative (i.e., synergistic contribution of predictors using statistical interactions) methods. There is, however, limited empirical work testing the relative benefit of these approaches for predicting disparities in exposure to discrimination or in health. The current study utilized both additive and multiplicative approaches to examine the effect of social status factors on discrimination and indicators of health (stress, depression, physical activity, metabolic risk, average waking cortisol, and cognitive functioning [working memory and processing speed]). A diverse community sample ($N = 260$; 39% Black, 53.08% female; $M_{age} = 52.39$ years, age range: 20–83 years) reported demographic and social status factors (race, gender, income, education) as well as experiences of discrimination. Additive models tested the main effects of social status factors on discrimination and indicators of health. Multiplicative models tested the effects of higher-order interactions of social status factors on discrimination and indicators of health. Finally, we tested the association of the number of stigmatized identities with discrimination and health indicators. Blacks (relative to whites) reported higher discrimination, stress, depressive symptoms, physical activity, had higher metabolic risk, and lower levels of average waking cortisol and impaired cognitive functioning ($p's < .05$). Yet, multiplicative models suggested the effect of race was moderated by other factors (e.g., a race by education interaction, $p = .04$, suggested higher education was protective against depressive symptoms for whites but not blacks). A count of the number of stigmatized identities was predictive of stress, depressive symptoms, physical activity, cortisol, and cognitive functioning ($p's \leq .001$), consistent with a “dose response” relationship between number of stigmatized identities and poor health. These results suggest that employing a combination of quantitative approaches (e.g., additive and intersectional models) may provide a more comprehensive understanding of how social status factors contribute to the complex inequalities experienced by marginalized groups.

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D205

10:00 AM-11:00 AM

INITIAL VALIDATION OF A NEW CONCEPTUALIZATION OF PSYCHOLOGICAL SCARCITY

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The purpose of this study was to begin the development of a measurement device designed to allow for an empirical evaluation of a new conceptualization of the construct Scarcity. This study used the standard process of scale development to generate an initial item pool, conduct item review and content validation by subject matter experts, and pilot the items in a general U.S. population sample. Forty-five items were developed based upon qualitative data that was collected about individuals' experiences with scarcity; twenty items were generated to represent material scarcity; 15 items were generated to represent time scarcity; 10 items were generated to represent psychological resource scarcity. Next the items were formally reviewed by subject matter experts. Five items were determined to be irrelevant. A national sample of 203 participants was used to test the remaining 40 items that were generated to assess scarcity. Exploratory factor analyses showed that a three-factor model of scarcity best fit the data, and evaluation of each of the factors confirmed the proposed structure of the Scarcity construct: a *time scarcity*, a *psychological resource scarcity*, and a *material scarcity* dimension. The scale was then provided to a sample of college students ($N = 117$), and again two weeks later ($N = 110$; 94% of original sample) in order to examine the degree to which the items on the measure were stable over time. Coefficients of stability for the scarcity total score and two of the subscales met the traditional (though arbitrary) minimum standard of $r \geq .70$. The coefficient of stability for the *psychological resources scarcity* subscale was $r = .67$. The proposed model has implications for both theoretical and applied practice. This model ensured that the construct of scarcity is as comprehensive as possible by identifying the dimensions of scarcity that are most salient to individuals. Moreover, the results of this study provided the basis for the development of a scarcity measure that can be used in future projects assessing the relationship between subjective indicators of SES and health disparities.

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D206

10:00 AM-11:00 AM

MEASURING HEART RATE VARIABILITY USING THE EMPATICA E4 WRISTBAND: RELIABILITY WITH HOLTER MONITOR

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Recent research has suggested that heart rate variability (HRV), an index of the largely vagal parasympathetic afferents to the heart, reflects the capacity of an individual to flexibly regulate physiological and emotional responses to external events. Because HRV reflects parasympathetic tone and general autonomic balance, it has been proposed as a particularly useful index of psychological and physiological stress (Thayer, Åhs, Fredrikson, Sollers Iii, & Wager, 2012). The gold standard for measuring ambulatory HRV is the Holter monitor, a device the size of a flip phone that requires chest electrodes and is either clipped to a belt or worn on a lanyard. Recent wristband devices have purported to measure HRV, but none have been demonstrated to provide reliable measures when compared to the Holter monitor. One potentially promising device for less intrusive HRV measurement is the Empatica E4 wristband, a medical-grade wireless device that allows for real-time acquisition of photoplethysmography (PPG), electrodermal activity (EDA), motion (via a 3-axis accelerometer) and temperature. We evaluated the reliability of HRV readings from the Empatica E4 wristband compared to a Holter monitor in 13 individuals with Posttraumatic Stress Disorder who were enrolled in a treatment trial. Participants underwent 36 hours of simultaneous Holter and E4 monitoring. Reliability of the E4 was measured by comparing second-by-second interbeat intervals from both sources. Mean intraclass correlation across the 13 participants was .67 (minimum = .40, maximum = .89). Missing E4 data (due to movement artifacts) and reliability of aggregate HRV measurements are discussed in the context of the utility of the E4 for research purposes. These findings suggest that the E4 wristband may be a less intrusive and reliable alternative for HRV research in ambulatory settings.

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D207

10:00 AM-11:00 AM

REFLECTIONS IN THE MIRROR: A NOVEL EXPERIENTIAL MEASURE OF BODY IMAGE DISSATISFACTION IN WOMEN

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Introduction: Negative body image is a significant and increasingly common problem among college-aged women. Previous studies have typically measured body image using self-report questionnaires; however, it is unclear whether questionnaires alone adequately capture the multidimensional nature of body image dissatisfaction. The current study evaluated the impact of a yoga intervention on a traditional self-report measure and a novel experiential assessment of body image.

Methods: The study included 75 college-aged women ($M \pm SD$: age=21.3+/-2.5 years, BMI=24.4+/-5.1 kg/m², 73.3% White) enrolled in a randomized trial examining the effects of a yoga intervention on body image dissatisfaction. Changes in body image dissatisfaction were compared on two measures: the gold-standard multidimensional Body-Self Relations Questionnaire – Appearance Evaluation subscale (MBSRQ) and an innovative experiential Mirror Exposure Task (MET). For this task, participants were asked to listen to a brief audio recording which guided them to pay close attention to certain body features (e.g., body parts, overall physique, weight) and comfort (e.g., how they feel in their skin) while viewing themselves in a full-length mirror in a private office, wearing only undergarments. After task completion, participants rated their distress using a Subjective Units of Distress Scale (SUDS; 0=No Distress, 100=Greatest Distress). Changes in scores for both measures were evaluated using a mixed ANOVA with Bonferroni post hoc.

Results: While there was no difference between MET and MBSRQ scores at baseline ($p > .05$), there was a significant Time X Condition interaction for change in body dissatisfaction on both the MET ($p = .005$) and MBSRQ ($p = .004$); compared to the wait list control group, participants in the yoga condition reported improved body image scores on both the MET ($p = .001$) and MBSRQ ($p = .003$) post-treatment. Further, MET scores were significantly correlated with MBSRQ scores at each time point (baseline $r = -.363$, post-treatment $r = -.569$, change $r = -.429$, $p < .05$).

Discussion: The current study was the first to demonstrate an impact of a yoga intervention on improvement in body image as measured by the MBSRQ and a novel experiential assessment (MET). Results further demonstrated a moderate association between MBSRQ and MET scores. Future research should examine the efficacy and validity of the MET as a stand-alone assessment of body image dissatisfaction, and how it could be integrated into various settings with different populations to assess body image.

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D208

10:00 AM-11:00 AM

THE CAREGIVER SICKLE CELL DISEASE SELF-MANAGEMENT SKILLS CHECKLIST: PRELIMINARY RELIABILITY AND VALIDITY

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Background Individuals with sickle cell disease (SCD) are increasingly surviving and transitioning into adulthood, Greaterdisease-specific self-management skills are associated with improved transition from pediatric to adult-centered care. Adolescents with SCD need assistance developing the knowledge and skills that help increase disease self-management. Caregivers may play an important role in transition preparation, however the assessment of caregiver perception of adolescent disease self-management behaviors is not yet defined in SCD. The Self-Management Skills Checklist-Caregiver version (SMSC-C) is a 21-item measure to assess caregivers' perception of adolescents' SCD-specific and general self-management behaviors. This study aims to evaluate the preliminary psychometric properties of the SMSC-C.

Method A retrospective cross-sectional design was applied. The SMSC-C was administered to 114 caregivers of adolescents with SCD. It was administered twice in adolescence during routine SCD-related clinic visits at a pediatric research hospital located in the southeastern region of the United States. The SMSC-C consists of two subscales: skills (11 items, range 1–5) and knowledge (9 items, range 1–3), with higher scores indicating greater knowledge and skills. Correlational coefficient alphas, reliability, and preliminary construct (hydroxyurea refill rate) and predictive validity (completion of first adult provider visit) analyses were conducted to examine the psychometric properties of each subscale.

Results Cronbach's coefficient alphas for caregiver skills and knowledge subscales were 0.79 and 0.77, respectively, indicating good internal consistency. The predictive and construct validity of the SMSC-C subscales was not supported. However, SMSC-C scores between the first administration ($M_{age} = 15.2$ years) and second administrations ($M = 630$ days after, $M_{age} = 17.4$ years) significantly increased, indicating the scales were sensitive to longitudinal changes in caregivers' reports of adolescent disease self-management.

Conclusions The SMSC-C is a clinical tool with strong internal consistency and sensitivity to score changes. Pediatric SCD medical providers can administer the SMSC-C to assess caregivers' perceptions of their adolescent's current disease self-management behaviors. Additionally, providers can utilize the SMSC-C to tailor programming to help caregivers prepare their adolescent for transition from pediatric to adult healthcare.

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D209

10:00 AM-11:00 AM

THE SELF-REGULATION QUESTIONNAIRE: PSYCHOMETRIC CONSIDERATIONS

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Individual differences in *self-regulation*, often defined as the ability to execute planned behavior, are important in understanding a myriad of behavioral health outcomes, ranging from diet and exercise to alcohol and substance use. Despite that differences in self-regulation are relevant for both, positive and negative health outcomes, little psychometric work has examined self-regulation measures. For example, the Self-Regulation Questionnaire (SRQ) is a 63-item self-report measure which is purported to assess seven aspects of behavioral self-regulation (i.e., receiving relevant information, evaluating information, triggering change, and searching for options, as well as formulating, implementing, and assessing a plan). Given that understanding which aspects of self-regulation are most difficult for individuals who engage in specific maladaptive behaviors (e.g., alcohol misuse) can inform prevention and treatment, the current study sought to evaluate the psychometric properties of the SRQ. Using a sample of college students (i.e., 18–25 year olds; $N = 790$; 65% female; 68% White; 25% Hispanic), the original factor structure, as well as one- and two-factor alternatives were tested using confirmatory factor analyses. Because neither fit the data well, an exploratory factor analysis was conducted. This suggested a two-factor solution (i.e., poor self-regulation and good self-regulation), which demonstrated good fit in confirmatory factor analyses (CFI = .91; RMSEA = .07). Chi-square difference testing indicated that both factors demonstrated measurement invariance across gender (DIFFTEST $X^2(134) = 153.57, p = .12$). Next, regression analyses were conducted using the alcohol-consuming subset of the sample ($n = 577$). Poor self-regulation ($B = .13, p < .01$) and good self-regulation ($B = -.16, p < .05$) were both significantly associated with binge drinking in multivariate analyses, adjusting for gender. The current study created a shortened, modified version of the Self-Regulation Questionnaire which demonstrated measurement invariance across gender. Alcohol-related results were theoretically consistent, with poor self-regulation positively associated with binge drinking. However, psychometrically-sound assessments which assess specific aspects of behavioral self-regulation are still needed.

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D210

10:00 AM-11:00 AM

VALIDITY OF GIGAPAN TECHNOLOGY TO OBSERVE ENVIRONMENTAL FEATURES AND ATTRIBUTES

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Background: Surrounding environments can encourage or constrain an individual's ability to participate in healthy behaviors. Built environmental characteristics have been identified as potential causal factors contributing to obesity and physical inactivity. However, measurement of environmental attributes has remained a challenge. GigaPan is a robotic system that obtains high-resolution photos using an everyday camera, by taking numerous photos that are stitched together using GigaPan software. This study examines the validity of GigaPan technology, compared to direct observation, for documenting environmental attributes. For comparison, we also examined the validity of using Google Earth to conduct the same environmental audit.

Methods: A total of 465 street segments in Pittsburgh, Pennsylvania were assessed using GigaPan, direct observation, and Google Earth audits. A 50-item audit instrument was used to capture three broad environmental constructs: land use, traffic and safety, and amenities and litter. Direct observation and GigaPan photos were captured by trained field staff, where pairs of observers walked each street while completing the audit tool or taking GigaPan photos. Audits of GigaPan and Google Earth images were completed by trained research staff. Sensitivity and specificity were used to estimate the validity of GigaPan and Google Earth audits using direct observation as the gold standard.

Results: Of the 50 items assessed, 24 items were excluded from the analysis (21 items due to low prevalence, 3 items due to low reliability). When an attribute was coded as present via direct observation, GigaPan audits identified the attribute correctly at least 80% of the time, for 7 of 24 items. When an attribute was coded as absent via direct observation, GigaPan audits identified the absence of the attribute correctly at least 80% of the time, for 16 of 24 items. Using Google Earth sensitivity was 80% or higher for 8 of 23 items and specificity was 80% or higher for 16 of 23 items. Overall, the validity of GigaPan and Google Earth were similar, with significant differences in sensitivity and specificity for 7 items and 3 items, respectively.

Conclusion: GigaPan performed well, especially when identifying features absent from the environment. A major strength of the GigaPan technology is its ability to be implemented quickly in the field (e.g. in response to environmental change). Temporal change to environmental attributes may be difficult to capture using web-based audits and researchers cannot control the timing of web-based audits (e.g. Google Earth). GigaPan is a valid method that can be used to characterize features and attributes within the environment that influence health behaviors.

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D211

10:00 AM-11:00 AM

VALIDITY OF SOCIAL SUPPORT MEASURES UTILIZED AMONG PEOPLE LIVING WITH HIV OR AT RISK FOR HIV-INFECTION: A SYSTEMATIC REVIEW

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Background: Social support is a key protective factor for self-management among at-risk of or people living with HIV (PLWH). Having higher levels of social support is also associated with better physical and psychological health outcomes. Social support is typically assessed using self-report measures. Often such measures are developed in the general population. However, little is known about the extent to which such measures have been validated among PLWH. The aim of this systematic review is to identify, characterize and synthesize available validated self-reported social support measures used among PLWH. The goal is to produce a database of validated HIV-specific social support measures that is readily available for use by researchers.

Methods: In April 2017, we conducted a search of the literature using a list of expert-refined search terms in the following electronic databases: PubMed, PsycTESTS, PsycINFO, CINAHL, and Cochrane Reviews. The search yielded 1,757 citations. After assessing for duplication, 1,208 articles remained for screening. All remaining articles underwent paired abstract reviews, full-text reviews, and data abstraction. During data abstraction, reviewers focused on study characteristics and reliability and validity characteristics of measures.

Results: We abstracted information for 32 social support measures. Just over half (17/32) were validated in samples of PLWH. The remaining 15 measures were used repeatedly among PLWH, but not explicitly validated in this population. Study characteristics include (4/32) women-only studies, (4/32) gay-or bisexual-men-only studies and 9 studies conducted in international settings. Scales varied in length (5–40 items), tended to have Likert response options (30/32), and most (27/32) assessed positive social support only. All but one study reported Cronbach's alpha (31/32). Types of validity reported were: convergent validity (21/32), discriminant validity (8/32), known-group validity (8/32), and criterion-related validity (8/32). There was little explicit evidence of reported examination of alternative modes of administration of these measures, cultural or language adaptations, or the responsiveness of these measures over time.

Conclusions: Results suggest that while numerous social support measures are used with PLWH, only 17 were validated in this population. Additional validation studies are necessary to improve the confidence in the use of an array of social support measures in research and the field.

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D212

10:00 AM-11:00 AM

ACCURACY OF NUTRITIONAL GUIDANCE PROVIDED TO BARIATRIC SURGERY PATIENTS ON FACEBOOK SUPPORT GROUPS

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Background: Increasingly, individuals who are interested in or who have undergone bariatric surgery turn to online social media platforms to get information and support. With over 80% of bariatric patients joining or following support groups on Facebook (Martins, et al., 2015), it is essential to understand the content fully, particularly in relation to nutrition recommendations. The aims of this study were: (1) to describe the type of nutrition-related information sought on bariatric Facebook support groups; and (2) to evaluate the accuracy of this content.

Method: To address Aim 1, posts collected via an analysis of the content of Bariatric Surgery Facebook pages were extracted for additional coding of nutrition-related content. A total of 315 posts were analyzed that contained content referring to seeking recommendations on nutrition. To address Aim 2, three registered dietitians examined the posts providing nutrition recommendations and coded for accuracy according to American Society for Metabolic and Bariatric Surgery (ASMBS) nutrition guidelines. Posts were coded as accurate, not accurate, containing both accurate and inaccurate information, and need more information to determine accuracy. Disagreements among dietitian experts was resolved via consensus. Frequencies of accurate versus inaccurate nutritional guidance were calculated.

Results: Analyses suggest that the greatest proportion (35%) of the nutrition-related support seeking was related to seeking advice on products or practices that would make it easier (and more enjoyable, e.g., variety) to follow nutrition guidelines. Members were looking for advice on ways to make following nutrition recommendations easier. The next most prevalent area of support seeking (21% of nutrition-related support posts) focused on the question of "Is this OK to eat?" Members were concerned with whether it was too early to have certain types of foods or amounts of food; other members expressed questions about whether it would be possible for them to ever consume the food or beverage because they had the surgery. Regarding the accuracy of the recommendations provided to those seeking nutrition advice (Aim 2), expert RDs identified that 47% of the posts were consistent with ASMBS nutrition guidelines and that 29% contained content that was not consistent with ASMBS nutrition guidelines. The remaining 24% required more information to code the post as containing accurate or inaccurate content.

Conclusion: Results suggest that individuals seek nutrition-related support for a variety of reasons and that the information provided may be consistent with ASMBS nutrition guidelines <50% of the time. Providing this information to individuals using these platforms is critical in ensuring they understand the need to consult with their bariatric team prior to adopting recommendations gathered from online modalities.

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D213

10:00 AM-11:00 AM

ALLOWING AD LIB CONSUMPTION OF FRUITS, VEGETABLES, AND LEAN PROTEIN IN A COMMERCIAL WEIGHT LOSS PROGRAM OVER 6 MONTHS

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Most weight loss programs recommend self-monitoring of all foods and beverages that are consumed. The objective of this study was to evaluate the effect of a new approach to dietary monitoring within Weight Watchers using a pre-post evaluation design and to determine predictors of 10% weight loss at 6 months. The approach assigned every participant a personalized Weight Watchers™ SmartPoints® Budget (daily and weekly energy goals). Over 200 foods (including but not limited to: skinless turkey and chicken breast, eggs, fish, lentils, vegetables and most fruits) were zero Points® foods that did not require tracking. All other foods were assigned SmartPoints values and participants tracked the portion and Points values of these foods. Participants attended weekly group meetings led by Weight Watchers leaders and used a digital monitoring app created for the study. Assessments at baseline, 3, and 6 months were conducted by trained research staff not affiliated with Weight Watchers and included objectively measured weight and waist circumference. Self-reported variables included food cravings, hunger/fullness, happiness, and sleep. Meeting attendance was the sum of those attended out of 24. Multiple imputation was used to impute missing data and results were pooled across imputation sets. A paired t-test evaluated weight change from baseline to 6 months. Demographic characteristics and 3-month values of self-reported variables, controlling for baseline levels, were used in logistic regression models to determine predictors of 10% weight loss (WL) at 6 months.

Participants (N = 152) were on average, 48.4 (±12.3) years old, had a BMI of 32.8 (±4.8), and 94% were female. At 6 months, 91% completed assessments. The average weight loss was 7.9% (±6.1; *pp* < .0001; 95% CI: 5.4, 6.4). Demographic characteristics and former participation in Weight Watchers (57% of the sample) did not predict 10% WL at 6 months. Higher attendance at group meetings over the 6 months predicted 10% WL (*p* < .01). Reductions in ratings of hunger from baseline to 3 months predicted 10% WL at 6 months (*p* < .01), but ratings of fullness did not. Reductions in ratings of fast food cravings from baseline to 3 months predicted 10% WL (*p* < .01), but changes in cravings for sweets, fats, carbs, and fruits and vegetables at 3 months did not. Change in sleep and happiness at 3 months did not predict 10% WL. In sum, average weight losses using an approach that does not require self-monitoring of all foods and beverages were almost 8%. Those who were most successful with the approach attended more group meetings and had greater reductions in hunger and fast food cravings over the first 3 months. The study suggests that monitoring of all foods may not be required for weight loss.

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D214

10:00 AM-11:00 AM

DO GOAL-DIRECTED OR OUTCOME-BASED FINANCIAL INCENTIVES PROMOTE PATIENTS' WEIGHT LOSS? THE FIREWORK INTERVENTION PROTOCOL

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Background: Obesity is a major public health challenge and exacerbates economic disparities through its adverse effects on employment discrimination and personal health expenditures. Financial incentive strategies for weight loss may intensify individuals' utilization of evidence-based behavior change techniques, while addressing obesity-related economic disparities in low-income populations. Trials have focused on testing incentives contingent on achieving weight loss outcomes. However, based on social cognitive and self-determination theories, incentives contingent on attaining intermediate behavioral goals may be preferable to incentivizing outcomes if they enhance individuals' skills and self-efficacy for sustaining long-term weight loss.

Objective: Describe the components and methods of the Financial Incentives for Weight Reduction (FIREWoRK) study, a primary care-based behavioral weight loss randomized controlled trial to test the comparative- and cost-effectiveness of two novel financial incentive strategies (goal-directed vs. outcome-based) among low-income adults with obesity, as compared to the provision of health behavior change resources alone. We hypothesize that goal-directed incentives will promote weight loss more effectively and efficiently than outcome-based incentives or resources alone.

Methods: We are recruiting 795 adults, 18–70 years-old with a body mass index ≥ 30 kg/m², from three primary care clinics serving residents of socioeconomically disadvantaged neighborhoods in New York City and Los Angeles County. All participants receive education, a weight loss program voucher and referrals, self-monitoring tools (Fitbit Alta HR, bathroom scale, and food journal) and monthly check-in visits. In addition to these resources, those in the two intervention groups can earn up to \$750 over 6 months for 1) participating in an intensive weight loss program, self-monitoring weight and diet, and meeting physical activity guidelines (goal-directed), or 2) a 2.5% to 5% reduction in baseline weight (outcome-based). Participants in the intervention groups also receive feedback framed using the behavioral economics principle of regret aversion. We will use generalized mixed-effect models for repeated measures to examine intervention effects on weight at 6, 9, and 12 months.

Discussion: This study addresses an important gap in obesity research by comparing goal-directed and outcome-based incentives for weight loss. We anticipate that the results will inform the design of scalable financial incentive programs to address obesity in public and private health systems.

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D215

10:00 AM-11:00 AM

EXPERIENCES OF DAILY SELF-WEIGHING AMONG AFRICAN AMERICAN BREAST CANCER SURVIVORS IN A WEIGHT GAIN PREVENTION INTERVENTION

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Little is known about the acceptability of daily self-weighing (DSW) in African American women and breast cancer survivors. This study explored subjective experiences of DSW among a sample of African American breast cancer survivors (AABCS) participating in a technology-based weight gain prevention intervention.

Data are from participants in the WELL Body study, a 6-month pilot randomized controlled trial of weight gain prevention interventions that promoted DSW as the primary self-monitoring strategy, and also focused on self-regulation of diet and physical activity. AABCS were randomized into one of three groups: 1) DSW (INT); 2) DSW + daily activity tracking (INT+); and 3) delayed intervention control. Intervention participants received a wireless scale and activity tracker (INT+ only), email lessons, and tailored feedback on weight and activity. A subsample of AABCS (n=21 of 24 intervention participants) completed post-intervention semi-structured interviews that covered barriers, facilitators, and adherence to DSW, as well as benefits of the program. Interviews were conducted in-person or over the phone, were audio recorded, and transcribed verbatim. The lead author read each transcript to identify key themes and develop a codebook. Each transcript was coded using Atlas.ti software and code outputs were used to identify overarching themes and patterns in the data.

On average, women in the qualitative subsample were 52.6 ± 8.3 years of age, obese at baseline (BMI: 33.1 ± 5.9), and weighed on 123.4 ± 48.0 out of the 168 days in the study period, with no differences compared to women not in the subsample (n=3). Women viewed DSW as a tool to achieve a healthier lifestyle. Barriers included initiating DSW and experiencing weight fluctuations. Seven women found that incorporating DSW into a morning routine reduced burden and facilitated adherence. Nine women felt discouraged by weight fluctuations; however, continuing to weigh daily normalized fluctuations and reduced negative emotions toward weighing. Fourteen women felt that DSW increased awareness of how diet and physical activity impact weight. Women framed the benefits of the program in terms of improved quality of life and prolonged survival following cancer treatment. These findings suggest that DSW is an acceptable self-regulation strategy for behavioral weight control interventions among AABCS. Future research could examine the potential benefits of DSW for posttreatment breast cancer survivors.

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D216

10:00 AM-11:00 AM

GENDER DIFFERENCES IN THE WEIGHT LOSS PROGRAM EXPERIENCE

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Introduction: Men tend to be understudied in the field of weight loss, while women are more likely to participate in weight loss programs. The object of this study was to examine similarities and differences between men and women in their motivations to participate and experiences during a behavioral weight loss program.

Methods: Focus group interviews were conducted with men and women following the conclusion of the Tracking Study, a behavioral weight loss intervention. Five focus groups were conducted with men and four with women. Each focus group had 5–9 people. All interviews were audiotaped and transcribed. Thematic analysis was conducted using NVivo 11. Themes and codes were created by two independent reviewers, who then compared codes and discussed discrepancies to reach consensus on themes. A data matrix was created to display responses, categorized by these themes.

Results: Weight loss was the primary factor that motivated both men and women to participate in the study. A majority of men and women told people that they were participating in the study. Both men and women heard mixed feedback from people about changes they had made and their weight loss progress. Many participants had positive feelings about the weight loss process, although some thought they did not lose enough weight. Neither men nor women wanted segregated gender groups, or only same-sex instructors. Both men and women found topics on nutrition such as Volumetrics to be very useful. However, women thought recipes and grocery lists were useful as well, while men did not. Women also reported applying more lessons learned in the study to real life than men. Some men mentioned that topics in the groups tended to be more women-centric. The majority of men heard about the study by radio, while women heard about it in many different ways. The majority of men had no prior weight loss experience, while the majority of women did.

Discussion: Overall, focus group participants had a positive experience in the Tracking Study intervention. This work highlighted differences between genders in previous weight loss experience and in preferences and motivations during weight loss. Future studies may benefit from reaching out to men through radio stations with male listener demographics and by tailoring topics and activities to men's needs and preferences to better engage and retain men in weight loss programs. More work is needed to design and test strategies that encourage both men and women to successfully lose weight.

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D217

10:00 AM-11:00 AM

HEALTH BEHAVIORS ASSOCIATED WITH POSTPARTUM WEIGHT-LOSS RESILIENCE AMONG LOW-INCOME NEW MOTHERS

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Weight-loss interventions for overweight and obese low-income mothers of infants and young children have had disappointing results. Competing demands and limited resources foil many mothers' weight loss efforts. Despite these barriers, during a 13-week randomized-control group weight-loss intervention, we found a subgroup within both treatment and control groups that was resilient in losing weight. The purpose of this study is to compare health behaviors that differentiated weight-loss resilient mothers within treatment and control groups from other women who generally gained weight. Overall, 49 healthy low-income new mothers (16 White, 20 African American, and 13 Hispanic) with a mean age of 25.2 years and body mass index of 32.5 completed the study. Health behaviors were measured by 15 items from the Self Care Inventory at 7 and 13 weeks of the intervention. Weights were measured on a digital scale. Group differences were evaluated using the t-test. Weight loss did not differ significantly between treatment (loss = 1.2 lb) and control (loss 1.1 lb) groups ($p < .05$). But despite being in a demanding life stage, we found 10/22 women in the treatment group were resilient in losing 3.4 to 30.2 lbs., and 11/27 women in the control group in losing 1.8 to 14.2 lbs. Compared to less weight-resilient mothers ($n = 28$ with minimal weight losses or weight gains up to 13.8 lb), weight-loss resilient mothers in treatment and control groups ($n = 21$) showed five behaviors. At both the 7th- and 13th-week of the intervention, weight-loss resilient mothers more often ate meals at regular times and ate a nutritious breakfast; in turn they less often substituted "junk" food for a regular meal, missed a main meal, or snacked on junk food. At the 13th-week, resilient mothers compared to other mothers also reported they more often ate a variety of foods from major food groups, and took time to exercise vigorously and do exercises to tone muscles. Our findings indicate some of these dietary and activity habits may have enabled weight-loss resilient women to reduce energy intake for weight loss. More so than calorie intakes, which are cumbersome to measure, our findings delineate habits that are quickly assessed. Conversely, our findings indicate that a more unhealthy or disorganized lifestyle shown by meal skipping and substituting "junk" food for meals may impair weight loss efforts. These patterns may explain disappointing results of some past interventions.

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D218

10:00 AM-11:00 AM

PARENTAL ROLE MODELING, SUPPORT, AND CONTINGENCY MANAGEMENT PREDICTS CHILD DIETARY OUTCOMES IN A COMMUNITY-BASED SAMPLE

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In young children, parental factors play a crucial role in establishing child dietary behaviors. However, research is limited on how parental role modeling and support of dietary behaviors and contingency management strategies to reinforce dietary behaviors affect child diet outcomes, especially among underserved children. This study examined the relationship between parental role modeling of healthy dietary behaviors, parental feeding style practices, and child dietary outcomes in a low-income, community-based sample of parents and preschool-aged children receiving a dietary intervention through The Expanded Food and Nutrition Education Program (EFNEP) or the Supplemental Nutrition Assistance Program-Education (SNAP-Ed). Children participating in the trial were 2–5 years old, 55% female, 37% African American and 36% Latino ($N = 153$). Parent/caretaker ages ranged from 20–74 ($M = 34.4$; $SD = 9.2$), and 81% were mothers. Forty-one percent of the children and 69% of parents enrolled were overweight/obese. At baseline and 6-week post-intervention, parents reported on: child's diet (Starting the Conversation), parental feeding styles (Caregiver's Feeding Style Questionnaire), and role modeling and supportive skills for dietary intake (Parental Support and Role Modeling (PS-RM)). Linear regressions were calculated to predict child diet outcomes at 6 weeks based on PS-RM and feeding styles. When controlling for child's baseline diet, PS-RM measures taken at baseline ($F(2, 124) = 26.36$, $p < .000$, $R^2 = .30$) and post-intervention ($F(2, 118) = 31.24$, $p < .000$, $R^2 = .35$) significantly predicted post-intervention diet scores, such that parent support and role modeling positively predicted dietary behaviors in children ($\beta = .159$, $p < .05$), ($\beta = .236$, $p < .000$). When controlling for baseline diet, post-intervention parent-centered contingency management ($F(2, 118) = 26.95$, $p < .000$, $R^2 = .314$) significantly predicted post-intervention diet scores, such that contingency management practices negatively predicted dietary behaviors in children ($\beta = -.172$, $p < .05$). These findings suggest that parent influences such as role modeling and support of positive dietary behaviors, and decreasing the use of food and non-food related rewards, may positively predict healthy dietary behaviors among at-risk children. Given their importance on establishing healthful dietary patterns, future studies should involve parents in obesity prevention efforts.

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D219

10:00 AM-11:00 AM

THE SMARTER LUNCHROOM MOVEMENT: IMPLEMENTATION CHALLENGES FOR SCHOOLS SERVING LOW-INCOME CHILDREN AND ADOLESCENTS

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School meals are an important factor to consider in childhood obesity prevention efforts among low-income children, as schools may provide these students with up to two meals per day. The Smarter Lunchroom Movement (SLM) is an intervention designed to increase the consumption of nutrient-dense foods among students by promoting small, inexpensive changes to the school lunchroom. These strategies include naming foods fun names, putting fruits in attractive bowls and placing the healthiest items at the front of the lunch line. Overall, the SLM has been shown to be effective in nudging children toward more healthful food options. However, little research has investigated how implementation of these strategies may differ in schools serving low-income students. The purpose of this study was to determine the impact of school SNAP-Ed eligibility and percent of students receiving Free or Reduced Priced Meals (FRMP) on the change in SLM strategies implemented following a SLM intervention. Data was collected from 25 schools in California who collectively serve approximately 15,800 students. Training on SLM implementation was provided to schools, and scorecards were administered before and after interventions by school staff with the assistance of Technical Advising Professionals to determine pre-post change in number of SLM strategies implemented. Across schools, there were statistically significant differences in pre- ($M=40.68$, $SD=7.34$) and post- ($M=57.48$, $SD=13.25$) scorecard totals ($t(24)=-7.06$, $p<.000$), indicating that schools were able to implement significant changes to their school lunchrooms. However, change scores were significantly different among SNAP-Ed eligible ($M=13.00$, $SD=10.39$) and ineligible ($M=24.44$, $SD=11.19$) schools ($t(22)=-2.54$, $p<.05$), such that SNAP-Ed eligible schools implemented fewer new SLM strategies post-intervention. Linear regressions were calculated to predict scorecard change scores based on percentage of FRMP students in schools, and findings showed that FRMP significantly predicted scorecard change scores ($F(1,23)=9.61$, $p<.01$, $R^2=.304$) such that schools with higher percentages of students receiving FRMP negatively predicted change scores ($\beta=-.551$, $p<.01$). These findings suggest that schools serving low-income students may require additional resources in order to implement more SLM strategies. Future research should examine what additional resources may be required to increase SLM implementation in these schools.

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D220

10:00 AM-11:00 AM

TIME IS OF THE ESSENCE: THE IMPORTANCE OF SESSION LENGTH TO OUTCOMES IN BEHAVIORAL WEIGHT LOSS TREATMENT

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Introduction: Obesity is a serious public health concern and over 70% of Americans are overweight or obese. Behavioral weight loss treatment (BWL) is the first line of treatment for obesity. BWL generally produces weight losses of 5–10%, a benchmark associated with key health and quality of life benefits. In order to produce clinically significant weight loss, systematic reviews have concluded that an intensive duration of BWL is necessary (≥ 14 visits over a 6-month period; 22 sessions in 12 months). However, no systematic review to date has evaluated how individual session length influences weight loss outcomes.

Methods: A systematic review was conducted to identify articles that conducted in-person BWL in adults and reported individual session lengths. A 2014 systematic review investigating treatment duration in BWL was identified in the search. Results from this review were used as a basis of the current review, as inclusion criteria were similar, and the search was updated to identify articles reporting on BWLTs published since 2014. A regression was performed including treatment duration and number of sessions as covariates.

Results: A total of 25 studies were included. Session length (in minutes) was a significant predictor of weight loss when controlling for treatment duration (in weeks) and number of sessions ($B = -.06$, $SE = .02$, $t = -3.55$, $p = .001$). Confirming previous findings, treatment duration was also a significant predictor of weight loss ($B = -.05$, $SE = .02$, $t = -2.45$, $p = .02$). Number of sessions was not a significant predictor of weight loss in the model ($B = .04$, $SE = .03$, $t = 1.54$, $p = .013$).

Discussion: Results indicate that for every minute of additional session time in BWLT, participants lose .06% more weight when controlling for treatment duration and number of sessions. This amount is statistically as well as clinically significant. This finding has important implications for the design of BWLTs and suggests that individual session length as well as overall treatment duration should be carefully considered in order to optimize weight loss outcomes in BWLT programs.

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D221

10:00 AM-11:00 AM

AUTONOMOUS MOTIVATION AND ACTIVE FEEDBACK: INTERVENTION EFFECTS ON BODY MASS INDEX IN OVERWEIGHT UNDERSERVED YOUTH

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Behavioral interventions that tailor around differences in social-cognitive factors hold great promise for engaging underserved groups in health behavior change. However, it remains unclear which aspects of one's values/beliefs are most critical for developing effective tailored interventions. In the present research, we examine whether future interventions may benefit from tailoring around individual differences in motivation. People's motivation for engaging in health behaviors range from autonomous (viewing a behavior as important/enjoyable) to controlled (viewing a behavior as a means to an end). According to Self-Determination Theory, people are more likely to maintain health behavior changes if they are autonomously motivated, and increases in competency and volition are essential for the development of autonomous motivation (AM). Thus, we propose that youth low in AM should be more responsive to interventions that foster volition/competency than youth high in AM. We hypothesize that behavioral skills training (BST), which promotes self-regulation through goals, planning and monitoring, should facilitate a lower z-BMI among youth low in AM relative to youth high in AM. As part of an 8-week intervention, youth ($N = 58$, Age $M = 12.7$, z-BMI_{baseline} $M = 2.1$, Income M 40k) enrolled in the Families Improving Together for Weight Loss trial completed weekly one-on-one BST sessions. During the BST sessions, the interventionist guided youth in creating a calorie goal and action-plan, provided feedback on progress, and reviewed youth's self-monitoring logs. The interventionist completed a weekly checklist, which was used to index the total number of times youth received feedback, set goals and engaged in self-monitoring. Linear regressions tested whether feedback, goal-setting and self-monitoring predicted z-BMI at post-intervention, and whether baseline AM for diet moderated these effects. Baseline youth z-BMI, attendance, family income, age and sex were covariates. There was a significant interaction between AM and goal feedback ($b = .03$, $SE = .01$, $p = .02$), but not goal-setting or monitoring. Among youth who started the program with relatively low AM, a greater level of goal feedback was associated with a lower z-BMI ($b = -.03$, $SE = .01$, $p = .04$). However, among youth who started the program with relatively high AM, goal feedback was not significantly associated with z-BMI ($b = 0.19$, $SE = .01$, $p = .15$). Thus, consistent with the proposed perspective that AM impacts how youth respond to different intervention components (presumably due to differences in volition/competency), we found that youth low in AM were more responsive to feedback. These results suggest that youth may have different needs/interests based on their motivation, and that tailoring intervention components to match differences in AM may be an effective strategy for increasing engagement.

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D222

10:00 AM-11:00 AM

COMPARING EFFECTIVENESS AND USER BEHAVIORS BETWEEN TWO VERSIONS OF A JUST-IN-TIME ADAPTIVE INTERVENTION FOR WEIGHT LOSS

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Research suggests that even small lapses from a weight control diet could explain suboptimal outcomes in behavioral weight loss programs. Just-in-time adaptive interventions (JITAI) delivered via smartphone apps can allow for the prediction and prevention of lapse behavior through momentary alerts to risk. Our team developed an app (OnTrack) that has been programmed to: (a) record data via ecological momentary assessment (EMA) on dietary lapse behavior and variables known to predict lapses, (b) apply machine learning to determine risk of a dietary lapse, (c) alert individuals when risk is high, and (d) offer a brief text-based micro-intervention (approximately 150–250 words) tailored to momentary risk factors. Phases I and II trials of OnTrack provided initial evidence for the feasibility, acceptability, and effectiveness of the app. However, during app development, there has been a tension between reducing participant burden by assessing fewer questions per prompt and having a more complete dataset from which to generate lapse predictions. Given outstanding user compliance in the initial study phases (>85% over 8 weeks), we hypothesized that adding additional EMA questions per prompt to OnTrack would have no effect on EMA adherence, increase app usage behaviors (i.e., accessing the library of brief interventions, and opening alerts to lapse risk) via more time spent in-app, and enhance algorithm predictions via reduced missing data. In turn, we believe a version of OnTrack with additional EMA questions per prompt could enhance user outcomes (i.e., lapses and weight change). The study (current $n=37$, projected n by April 2018=112) evaluates these research questions by randomizing participants to use either the original app (i.e., eight questions per prompt; OT) or an app with a longer question distribution scheme (i.e., 16 questions per prompt; OT+) for ten weeks. Preliminary data thus far reveal small differences in percentage of completed EMA ($M_{OT}=76.1\%$ v. $M_{OT+}=71.7\%$) and percentage of opened risk alerts ($M_{OT}=51.2\%$ v. $M_{OT+}=50.6\%$). Participants in OT+ are accessing the intervention library more than the OT group ($M_{OT}=12.6$ v. $M_{OT+}=20.9$). Minimal differences in percent weight loss ($M_{OT}=-5.4\%$ v. $M_{OT+}=-5.2\%$) and reported lapses ($M_{OT}=30.0$ v. $M_{OT+}=27.8$) have been observed. Between-groups statistical differences, algorithm performance, and associations between app usage and outcomes (i.e., lapse reduction and weight loss) will be presented with the full sample in April. Results from the current study provide scientific insight into the association between app design and user behavior, as well as leveraging this relationship to enhance effectiveness of just-in-time technologies for weight loss.

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D223

10:00 AM-11:00 AM

DEPRESSION SUBTYPES AND LOSS OF CONTROL EATING IN SEVERE OBESITY

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Background: Despite physiological and psychological differences across depression subtypes (melancholic vs. atypical), the role of these subtypes in eating and obesity is unclear. The atypical depression subtype may be particularly important given that it is characterized by somatic disturbances, including hyperphagia. Thus, one factor that may be influential in atypical depression is loss of control eating (LOC). LOC is the subjective sense of loss of control when eating and is often associated with higher caloric consumption. Adults with obesity and atypical depression may at an increased risk for LOC, which may account for obesity progression or maintenance.

Objective: To examine atypical vs. melancholic depression subtypes in relation to LOC among severely obese adults seeking bariatric surgery. We hypothesized that atypical depression would be associated with greater LOC compared to the melancholic subtype.

Method: The sample consisted of 334 obese adults (body mass index; $BMI \geq 35 \text{ kg/m}^2$) who received a pre-surgical evaluation for bariatric surgery (aged 46.27 ± 12.78 years; 75.9% female). The Beck Depression Inventory-II (BDI-II) was utilized to categorize depression subtypes. A patient was categorized with atypical depression if they endorsed both hyperphagia and hypersomnia symptoms. All other patients were categorized in the melancholic subtype. LOC was indexed by averaging the standard z -scores of two items on the Binge Eating Scale (BES). The hypothesis was tested using a one-way ANCOVA covarying for age, gender, and BMI.

Results: An ANCOVA comparing the depression subtypes revealed a significant effect of depression subtype on LOC, $F(1,334) = 10.3, p \leq .001$. Patients with the atypical subtype endorsed LOC scores that were 43% higher than the sample average after controlling for BMI.

Conclusions: Adults with severe obesity and an atypical depression subtype exhibited significantly higher LOC compared to their severely obese peers with a melancholic subtype. These cross-sectional results suggest that obese adults with atypical depression may be at an increased risk for LOC but could also point to a third variable issue, where LOC and atypical depression are driven by a shared external factor. Future studies testing directionality and potential confounders and mechanisms are critical.

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D224

10:00 AM-11:00 AM

DEVELOPMENT AND CAPACITY EVALUATION OF A PARENT ADVISORY TEAM ENGAGED IN CHILDHOOD OBESITY RESEARCH

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OBJECTIVE: Guided by community-based participatory research principles, this mixed-methods process evaluation examined the capacity of a newly developed Parental Advisory Team (PAT) engaged in childhood obesity research in a medically underserved region.

METHODS: Following the successful completion of a 3-month evidence-family-based childhood obesity treatment program (*iChoose*), 26 parents/caregivers who completed 18 sessions ($\geq 50\%$) of *iChoose* were contacted to participate in the PAT; 39% ($n=10$) consented. Between June 2015 and March 2016, the PAT had 9-monthly meetings with the purpose of building capacity to develop and pilot test maintenance phase intervention sessions and support future *iChoose* efforts. During the first 4 meetings, the PAT engaged in key activities related to understanding *iChoose* program outcomes and defining their role and purpose as a partnership. During the next 5 meetings, the PAT initiated content development and pilot testing of intervention sessions for an *iChoose* maintenance phase. Assessments included a 39-item quantitative survey at baseline and 9-month follow-up and a 12-item qualitative interview at follow-up.

RESULTS: Survey data indicated that PAT members perceptions of the identified capacity, dimensions (i.e. collective efficacy, communication, community's power, leadership, participation and influence, problem assessment, personal and community influence, satisfaction) were positive at baseline (3.8–4.3 on 5-point scale) and remained positive at follow-up (3.9–4.4 on 5-point scale); changes were not statistically significant. Qualitative data revealed that PAT members understood their roles and were confident that the continuation of monthly meetings would lead to future capacity improvements. Prioritized by the PAT, *iChoose* maintenance sessions focused on activities such as healthy snack and meal preparation, group-based physical activity opportunities, and body image concerns among youth. The PAT also engaged in the development of a Patient Centered Outcomes Research Institute grant proposal.

CONCLUSION: Despite the small sample size, the PAT was able to develop and pilot test weight maintenance activities, participate in grant development, and remain engaged throughout the CBPR process. Engaging parents as key collaborators and equal partners in research efforts and understanding changes in their capacity fills an important gap in the childhood obesity treatment literature.

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D225

10:00 AM-11:00 AM

DIET, SEDENTARY BEHAVIOR, AND PHYSICAL ACTIVITY RATES AMONG HISPANIC CHILDREN IN RURAL COMMUNITIES

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Background: Hispanic children in rural communities are disproportionately obese compared to their urban counterparts. Little is known about obesogenic behaviors in this population. This study assessed the relationship between diet, sedentary behavior, physical activity (PA), and Body Mass Index (BMI) among Hispanic children in Eastern Washington rural communities.

Methods: Together We STRIDE is a community-based obesity intervention trial (n=665). A subset of the children (n=167) were measured on diet (fruit, vegetable, and sugar-sweetened beverage (SSB) intakes), sedentary behavior, and PA by wearing an accelerometer at baseline. Eligible Hispanic children were ages 8–11 (grades 3–4). Means and frequencies were estimated using t-tests or Chi-square tests. We built linear regression models to estimate the association of diet and PA on BMI Z-scores adjusting for gender and accelerometer wear time.

Results: Participants' mean (SD) age was 9.5 (0.6) years and half were boys. Mean BMI-percentile was 76.9 (26.1), and BMI Z-score was 1.05 (1.04). Mean daily intake of fruits was 1.3 (0.5) cups and 0.9 (0.3) cups of vegetables. Mean SSB intake was equivalent to 5.5 (2.5) teaspoons, with boys consuming more than girls (p=0.004). Mean weekend day sedentary time was 6.4 (3.6) hours per day, and boys spent more hours sedentary than girls (p=0.02). Of sedentary hours, 4.9 (3.2) were screen time; boys had more screen time than girls (p=0.001). Mean daily moderate and vigorous PAs were low with 29.4 (12.1) minutes and 11.3 (8.4) minutes respectively. Boys engaged in more moderate (p=0.003) and vigorous (p=0.04) PA than girls. There was a significant association of SSB intake on BMI Z-score (p=0.07); for every 1 teaspoon increase in daily SSB intake, Z-score was higher by 0.71. There was a reverse association of moderate and vigorous PA on Z-score, for every 1 minute increase in moderate PA, Z-score was lower by 0.04, and 0.05 for vigorous PA.

Conclusion: Hispanic children in rural communities did not meet the daily recommendations for fruit and vegetable intakes. Children spent more than double the daily recommended limit of 1–2 hours in front of a screen and achieved less than the daily recommendation of 60 minutes for moderate-vigorous PA. SSB intake and all levels of PA impacted children's BMI regardless of gender. The findings underscore the need for lifestyle behavior interventions for Hispanic children in rural communities.

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D226

10:00 AM-11:00 AM

DOES GROUP SIZE MATTER IN AN ONLINE BEHAVIORAL WEIGHT CONTROL PROGRAM WITH FACILITATED CHATS?

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Purpose: Data suggest behavioral weight control delivered in a group format may offer better outcomes than the same intervention delivered individually. However, group size varies considerably in the reported literature and no data inform how group size in online weight control might influence outcomes. Therefore, we compared program engagement and weight losses based on group size.

Methods. Overweight individuals (N= 495, mean BMI = 35.7, mean age= 48.4 years, 90% women, 24% African American) engaged in an online group-based behavioral weight control program were treated in 27 separate groups ranging in size from 13 to 21 participants as part of a randomized controlled trial examining the addition of motivational interviewing to group-delivered behavioral weight control. At study entry, participants indicated times they were available to meet and were then assigned to a group based on their stated availability. All participants were offered 24 weekly synchronous chat sessions moderated by an interventionist and each chat sessions followed a protocol-specified treatment content. Groups were closed and did not admit new members after the initiation of intervention. Weight was measured at 6-months. Correlations between group size and attendance at chat sessions, 6-month weight loss and number of drop outs (i.e., participants failed to get weight measured at 6-months) within the group were examined.

Results. On average, individuals successfully lost weight, with mean weight losses of 5.9 kg at 6-months, and no differences between treatment conditions. Participants attended an average of 15.7 (out of 24) chats and a 10% drop out rate was observed. There was no association between group size and weight loss (r=-0.20, p=0.32) or between group size and program attrition (r=0.09, p=0.66). However, there was a significant positive association between group size and chat attendance (r= 0.70, p

Conclusion. Larger group size was significantly associated with higher attendance at online group chats, although there was no association between group size and weight losses achieved in the program. This suggests that larger group size may promote greater engagement in online behavioral weight control interventions. However, because individuals were not randomly allocated to group sizes, these findings must be viewed as hypothesis generating and are in need of examination in a prospective experimental design before definitive conclusions on the optimum structure for online group-based programs. Data on treatment factors associated with group size will offer critical program design guidance to researchers, treatment providers and policy makers.

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D227

10:00 AM-11:00 AM

DOES PLACE MATTER? PERCEPTIONS OF NEIGHBORHOODS AS PREDICTORS OF TREATMENT OUTCOME IN A CHILDHOOD OBESITY PREVENTION STUDY

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Introduction: Though social ecological models of health and cross-sectional studies have established a relationship between neighborhood environment and weight status, few have looked at how these environmental factors influence response to obesity intervention in adults or children (e.g. Farley et al., 2007; Kerr et al., 2010). This study explored these potential links in children ages 2 to 4 years of age in an obesity prevention study conducted in Hartford CT, one of the poorest, mid-sized cities in the country. We hypothesized that 1) lower scores on four key neighborhood environmental factors (i.e. accessibility, walkability, neighborhood surroundings, and safety) would predict poorer response to treatment than higher scores, and 2) neighborhood safety would be the strongest predictor of these outcomes.

Methods: Prior to the start of the primary care-based intervention program (Cloutier et al., 2015), parents (n=200) completed a modified version of the *Neighborhood Environmental Walkability Scale (NEWS)* to assess their perceptions of their child's neighborhoods. Baseline responses were analyzed as potential predictors of BMI percentile change from baseline to one-year follow-up.

Results: Parents endorsed relatively high levels of accessibility, walkability, safety, and favorable neighborhood surroundings (i.e. means of 3 or higher on a scale of 1–4). While variation in BMI percentile change was observed (M = 0.10; SD = 20.05), none of the environmental factors predicted intervention outcomes ($p \geq 0.23$).

Discussion: The results of the present analyses suggest that parental perceptions of the neighborhood environment may not be relevant in predicting treatment outcomes. Future studies should utilize more objective measures of neighborhood design to study the relationship between environmental factors and obesity intervention outcomes. Furthermore, studies comparing neighborhoods across different cities might help illuminate the potential relationship between disparate neighborhood conditions and treatment outcomes.

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D228

10:00 AM-11:00 AM

EFFECTIVENESS OF A PEER-LED, COMMUNITY-BASED WEIGHT LOSS INTERVENTION FOR RURAL ADULTS

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Background: Rural adults in the US have disproportionately high obesity rates compared to non-rural adults. Effective, accessible, and sustainable strategies are needed to reduce obesity in rural adults. Win With Wellness (WWW) is a collaborative partnership in two rural counties in northwest Illinois with a goal of addressing obesogenic behaviors using multiple strategies. One such strategy is the implementation of community-based weight loss groups.

Methods: WWW recruits and supports community-based partners to implement a weekly, group-based, peer-led, weight loss groups using an evidence-based intervention. Participant data, including demographics, weight, health status, and physical activity (PA) and dietary behaviors, were collected at baseline and one-year follow-up. Using paired and two-sample t-tests, we assessed participant changes in weight over one year, as well as demographic, health-related, and behavioral factors associated with weight loss.

Results: To date, WWW has partnered with businesses, community organizations, and healthcare agencies to initiate 26 weight loss groups. At the time of analysis, eight groups had completed one-year follow-up (n=49 participants). Overall, participants had significant reductions in weight and body mass index (BMI) from baseline (weight: M=206.1, SD=42.9; BMI: M=33.1, SD=5.6) to one year (weight: M=194.1, SD=41.5, $p < .0001$; BMI: M=31.1, SD=5.9, $p < .0001$). Smaller reductions in weight were associated with non-white race ($p = .0001$), high school education or less ($p < .05$), and having a Type 2 diabetes diagnosis ($p < .0001$). Additionally, while meeting recommended PA guidelines at baseline was not associated with weight loss ($p = .95$); meeting recommended PA guidelines at one-year follow-up was associated with greater weight loss ($p = .0007$).

Conclusions: Community-based weight loss groups can be effective for addressing obesity in rural adults, and peer leadership of weight loss groups for rural adults may provide a feasible and sustainable solution. Weight loss outcomes for rural adults may be improved through promoting PA and addressing barriers to PA engagement. However, interventions may require additional tailoring and support to address participant needs, such as barriers to participating in weight loss programs and having multiple chronic health issues.

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D229

10:00 AM-11:00 AM

EFFECTIVENESS OF THE NATIONAL DIABETES PREVENTION PROGRAM FOR AFRICAN AMERICANS, INCLUDING BY GENDER AND AGE

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Introduction: Reducing diabetes and obesity risk is a public health priority, especially for racial/ethnic minority groups who experience related health disparities. The National Diabetes Prevention Program (NDPP) is a widely disseminated, evidence-based lifestyle intervention that promotes moderate weight loss to prevent diabetes. Yet, previous research suggests that the NDPP is least effective for non-Hispanic black (NHB) participants in terms of weight loss outcomes. Studies have also shown that women, including younger women in particular, have disparately worse NDPP outcomes than men. This study aims to assess whether there are gender and age differences in NDPP outcomes among NHBs, which is currently unknown, yet important for developing tailored program improvements.

Methods: The NDPP was delivered in an urban safety net healthcare system to adults with diabetes risks (e.g., A1c 5.7–6.4). In an observational study, we compared attendance and weight loss outcomes among 487 eligible NHB and non-Hispanic white (NHW) individuals who enrolled in the program, including differences by gender and age. Age differences were examined using a median split (median=52.0 years). Data were collected between 2013–2017. Analyses were conducted in 2017.

Results: There were no significant differences between NHW (n=224) and NHB (n=263) enrollees in income, age, gender, baseline body mass index, or baseline hemoglobin A1c. NHB enrollees were 37% less likely to attend at least one NDPP session in adjusted models (OR=0.63; 95%CI 0.43–0.93) than NHW enrollees. In particular, younger NHBs enrollees were almost half as likely to attend one or more sessions (OR=0.54, 95%CI 0.32, 0.90) than older NHB enrollees. However, there were no significant differences in total attendance or weight outcomes. No significant gender differences in NDPP outcomes were found among NHBs. Both groups had 3.1% (SD=5.6) mean weight loss.

Conclusions: While NHB enrollees were less likely to attend the NDPP, once engaged they achieved similar weight loss than NHW enrollees, including across gender and age groups. This study highlights the need for earlier and more intensive efforts to engage NHBs with diabetes risks in the NDPP, especially for younger individuals.

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10:00 AM-11:00 AM

EFFECTS OF PARENT PERCEIVED STRESS AND ADOLESCENT WEIGHT-RELATED CONCERNS ON BMI IN OVERWEIGHT AFRICAN AMERICAN ADOLESCENTS

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Family Systems Theory highlights the importance of positive parenting in creating nurturing and supportive environments for youth. Previous studies have shown that parental practices can influence youth health behaviors such as adolescent weight. Although the effects of parental practices on adolescent health have been examined, limited research has been conducted regarding its relationship with parent perceived stress and with adolescent obesity and adolescent weight-related concerns. The present study assessed the impact of parent perceived chronic stress and parenting practices related to food restriction, feeding responsibility, monitoring and adolescent weight-related concerns on adolescent zBMI. It was hypothesized that less positive parent feeding practices and higher parent perceived stress would interact in predicting poorer adolescents' zBMI outcomes among families enrolled in the Families Improving Together (FIT) for Weight Loss trial. Data were collected from African American adolescents (N =115; M_{age} = 12.98; 64.3% female) and their parents (N =115; M_{age} = 45.01; 93% female; M_{income} <40k) who took part in Project FIT. Parent perceived stress was self-reported using the Cohen Perceived Stress Scale and parenting practices, including adolescent weight-related concerns, were self-reported by adolescents using the Birch Child Feeding Questionnaire. Adolescent zBMI was calculated using objective measures of height and weight and were standardized using CDC growth curves. Age, parent BMI, and family yearly income were covariates. Linear regression analyses demonstrated a significant interaction between parent perceived stress and adolescent weight-related concerns in predicting adolescent zBMI ($b = .13, SE = .06, p < .05$). This interaction revealed that higher adolescent zBMI was associated with higher parental stress and higher adolescent weight-related concern as compared to those with low perceived stress and low weight related concerns. These results suggest that parental perceived stress level is related to adolescent weight-related concerns and adolescent weight status, and should be the focus of future health promotion programs in underserved African American adolescents.

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D231

10:00 AM-11:00 AM

IMPACT OF A SCHOOL-BASED WEIGHT MANAGEMENT PROGRAM ON MEXICAN-AMERICAN ADOLESCENTS DURING THE SUMMER MONTHS

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BACKGROUND: Mexican-American adolescents have the highest obesity rates of any race/ethnic group. Schools are an ideal location to provide weight management education as a large majority of adolescents attend public schools. While school-based weight management programs have been able to create short-term success, maintenance of weight management remains an important research area. One potential factor for lack of long-term success in school-based programs is that benefits are lost during the summer.

OBJECTIVE: The purpose of this study was to examine seasonal weight patterns in low-income Mexican-American middle school students and the impact of a school-based weight management program on these patterns. The first aim of this study was to evaluate changes in students' standardized body mass index (zBMI) during the school year compared to the summer when not enrolled in a weight management program (e.g. control condition). The second aim of this study was to compare the impact of the program on school year zBMI and summer zBMI.

METHODS: Middle school students (n=425) were recruited from a primarily Mexican-American (95%) school in Houston, Texas. Participants were randomly assigned to a weight management (n=230) or control condition (n=195). Height and weight were measured at baseline, spring (March-May), and the beginning of the next school year (August-October). All analyses evaluated healthy weight and overweight/obese students separately. Paired sample t-tests compared zBMI change scores during the school year versus summer. Two-by-two repeated measures ANOVAs determined program group differences in zBMI scores across school versus summer periods.

RESULTS: Among the control group, students' zBMI scores changed differently during the summer compared to the school year ($p < .001$). Students' zBMI scores decreased during the school year ($p < .001$) for both healthy weight and overweight/obese students. Program participants showed similar changes (e.g. school year decreases and summer increases) ($p < .05$). However, zBMI did not differ by program status for healthy weight students. Students who were overweight/obese in the program decreased zBMI during the school year ($p < .01$) and increased zBMI to a lesser extent over the summer ($p < .01$) compared to the control group.

CONCLUSION: A school based weight management program provides some protection against summer weight gain among Mexican-American middle school students.

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10:00 AM-11:00 AM

INTERACTIVE PHYSICAL ACTIVITY LAB: UTILIZING EXPERIENTIAL EDUCATION TO PROMOTE BEHAVIOR CHANGE AMONG CHILDREN AND YOUTH

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In Louisiana, 28% of children are overweight or obese, two-thirds do not meet physical activity recommendations, and more than half fail to meet fitness standards. Latest trends show a need for innovative interventions and creative motivational techniques to be used while working with children who struggle with weight management. The purpose of the project was two-fold: (1) to teach university students assessment skills needed to work more effectively with youth who struggle with maintaining a healthy weight, and (2) to implement two interventions aimed toward increasing physical activity participation.

Twenty-one children participated in the project. First, their preferences for exergaming versus using traditional cardio equipment were assessed. Results showed participants who chose exergaming spent more time participating in physical activity than participants who chose traditional cardio equipment ($p = .010$).

The first intervention examined the role of competition to elicit vigorous intensity physical activity, measured by heart rate, while exergaming. Competition was manipulated through both performance-based praise and two-player competitive play. Intensity was significantly higher following the performance-based praise vs. pre-praise ($p < 0.05$), and the post-praise session reached vigorous intensity (67% HR_{max} vs. 59% HR_{max}). Heart rate did not differ between competitive play vs. solitary play ($p = 0.06$), but both sessions met vigorous intensity criteria (70% HR_{max} vs. 65% HR_{max}).

The second intervention tested the efficacy of auditory and visual stimuli to increase children's physical activity intensity while exercising. The children participated in four exercise conditions (treadmill with/without music and cycling with/without video). Heart rate and distance travelled were monitored. T tests were used to compare %HR above rest between conditions. Results showed that children reached levels of vigorous intensity in all conditions. There was a small but non-significant effect in %HR above rest in the expected direction for the treadmill activity (94 ± 18 with music and 87 ± 18 without music, Cohen's $d = 0.39$) but in the unexpected direction for the cycling activity (49 ± 25 with video and 59 ± 30 without video, Cohen's $d = 0.37$). There were no differences in other heart rate metrics or in distance travelled.

Increasing opportunities for competition and utilizing a variety of auditory and visual stimuli, may lead children to participate in longer, more intensive bouts of physical activity, which is important for good physical health and weight management.

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D233

10:00 AM-11:00 AM

IS EARLY WEIGHT LOSS A TREATMENT-SPECIFIC OR GENERAL PREDICTOR OF WEIGHT LOSS SUCCESS?

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Background: Early weight loss (EWL) in the first 1–2 months of behavioral treatment is a strong predictor of total loss at later follow-up points. However, no studies have examined whether this relationship is attributable to the early differences alone or to ongoing differences in treatment response. Further, no study has investigated whether EWL in behavioral treatment predicts weight loss when a different treatment modality, such as pharmacotherapy, is introduced.

Methods: Data were from 170 participants with obesity (baseline BMI = 40.8 ± 5.8 kg/m², age = 44.5 ± 11.1 yrs; 87.6% female; 71.3% black, 21.8% white) who enrolled in a two-phase trial. Data from the weight loss phase, which provided weekly lifestyle counseling and a 1000–1200 kcal/d meal replacement diet, were used to examine the relationship between EWL (i.e., 4-week) and subsequent rate of weight loss in behavioral treatment. Data from the maintenance phase, in which participants who had lost $\geq 5\%$ of initial weight were randomized to 52 weeks of maintenance counseling with lorcaserin or placebo, were used to determine whether EWL with behavioral treatment moderated the effect of medication condition or predicted weight change among lorcaserin-treated participants.

Results: EWL in the first 4 weeks of behavioral treatment ($3.6 \pm 1.7\%$) predicted greater total losses ($r^2 = .61$, $p < .001$) and a faster rate of weight loss in the subsequent 9 weeks of the program ($b = -0.11$, $SEb = 0.02$, $p < .001$). However, EWL in behavioral treatment did not moderate the efficacy of lorcaserin, in comparison to placebo, for the maintenance of lost weight and did not predict total weight loss or rate of weight change among lorcaserin-treated participants.

Conclusions: EWL predicted subsequent weight loss in a behavioral treatment program, but did not predict weight change with pharmacotherapy. These findings suggest that EWL is a treatment-specific indicator of a patient's potential to successfully lose weight and support recommendations to modify treatment for individuals with poor early weight loss.

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10:00 AM-11:00 AM

LOCUS OF CONTROL AND WEIGHT LOSS AFTER BARIATRIC SURGERY FOR OBESITY

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Background: Bariatric surgery for obesity results in drastic, sustainable weight loss for most recipients. However, not all are successful. Locus of control theory may help explain differences in weight loss outcomes. Individuals with an internal locus of control believe they determine their outcomes, while those with an external locus of control believe outside forces determine their outcomes. This world-view orientation may impact weight management behaviors. We hypothesized that high internal locus of control would lead to greater weight loss post-bariatric surgery.

Methods: 30 pre-bariatric surgery patients were recruited to participate in a mixed methods study of dietary and weight changes after bariatric surgery. 22 participants were available for a 12-month follow-up and completed a series of questionnaires. Locus of control was measured using two validated scales: Weight Locus of Control Scale (WLOC) and Levenson's Internality, Control and Powerful Others Scale (ICP), which is a general measure of control orientation. Weight and height were obtained from the medical records pre-surgery, one year and two years post-surgery. Nonparametric statistics were used to test relationships between scores on the locus of control scales and weight outcomes (percent weight loss, total weight lost, and change in BMI).

Results: Mean BMI decreased from 47.1 kg/m² pre-surgery to 33.5 kg/m² at one year. Mean BMI at 2 years was 33.8 kg/m². Neither pre-surgery BMI nor pre-surgery weight loss correlated with locus of control measures. At one year, WLOC was not related to weight loss outcomes. At 2 years, higher scores (indicating external weight locus of control) negatively correlated with weight outcomes ($p < 0.05$). The ICP subscales related to weight outcomes as follows: Scores on Internality negatively correlated with weight outcomes ($p < 0.01$) at both time points. Scores on Powerful Others also negatively correlated with weight outcomes at 2 years ($p < 0.05$). No relationship was found between Chance and weight outcomes at either time point. Internality scores were not related to WLOC scores, but scores on Powerful Others and Chance positively correlated with WLOC ($p \leq 0.001$).

Conclusion: Higher internal locus of control orientation was associated with less weight loss following bariatric surgery, contrary to the predicted relationship. Higher externality scores for WLOC were associated with less weight loss, consistent with the hypothesis. Further research is needed to explain these discrepant findings.

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D235

10:00 AM-11:00 AM

OPPORTUNITIES FOR OBESITY MANAGEMENT IN US PRIMARY CARE PRACTICES

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Background: In November 2011, the Centers for Medicare and Medicaid Services approved the use of a new Healthcare Common Procedure Coding System code in primary care for providing Intensive Behavioral Therapy (IBT) services for obese patients. Despite the widespread prevalence of obesity in the Medicare population, use of this benefit has been low suggesting significant underutilization of this service. The study objective is to describe provider experiences billing services for IBT for obesity from 2012 - 2015 and strategies used by providers successfully delivering and being paid for this service.

Methods: Descriptive, exploratory study using the Medicare Provider Utilization and Payment Physician and Other Supplier Public Use Files, written surveys and telephone interviews. Descriptive statistics and qualitative thematic analysis was used. Participants included primary care providers who have utilized the benefit for more than 10 unique patients in at least one calendar year.

Results: Approximately 38% of the almost 32.3 million Medicare full/nearly full fee-for-service beneficiaries in 2012 met obesity criteria, however, only 28,135 received IBT for obesity from all providers billing this service. In 2015, 80,333 beneficiaries received IBT for obesity from such providers and yet this still represents less than 1% of obese beneficiaries. Data from 2015 reveal that most claims were filed by primary care providers in the South (587), followed by the Northeast (472), West (339), and Midwest (195). Most providers were internal medicine (865) or family medicine (559) practitioners. Examining providers' use of this payment over time reveals varying patterns of stopping, starting and continuing use between 2012–2015. Qualitative analysis of interview data reveals specific models of providing IBT used by providers such as group visits, specific training and programs, and use of specific provider types (usually nurse practitioners or registered dietitians). However, even among regular IBT providers, complaints about the barriers to use of the benefit were significant and include inadequacy of reimbursement, limitations on provider type approved for use and difficulties with billing and payment.

Conclusions: The Medicare IBT for obesity payment code is severely underutilized. Even among practices utilizing it, there are significant barriers to use. Policy changes are likely needed to improve the assistance provided to obese patients in the primary care setting.

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D236

10:00 AM-11:00 AM

RESPONSE TO A WEIGHT MANAGEMENT PROGRAM: RURAL VS. URBAN DWELLING INDIVIDUALS

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Individuals living in rural communities have lower levels of physical activity, consume less healthy diets, and have higher rates of obesity compared to urban residents. Residents of rural communities have diminished opportunities for physical activity and access to healthy nutrition options (e.g., food desert) compared to their urban dwelling counterparts and this may diminish weight loss efforts of rural residents compared to urban residents. However, the differential effectiveness of behavioral weight management interventions delivered to overweight/obese rural or urban adults is unknown. Data from a recently completed 18 mo. weight loss (0–6 mos.) and maintenance (7–18 mos.) trial allowed for an evaluation of rural/urban differences in response to the same weight management intervention (Donnelly et al., Obesity, 2013).

Methods: Overweight and obese adults (N=267, age= 45.5 years, 67% female) participated in a randomized equivalency trial to compare a behavioral weight management delivered face-to-face (FTF) or by group conference calls (GP). Weight change between the FTF and GP arms was equivalent at both 6 and 18 mos., thus data from both groups was combined for this analysis. Participants were prescribed a reduced energy diet (1,200–1,500 kcal/d.), increased physical activity (300 min./wk.), and were asked to attend 60 min behavioral sessions each week during weight loss. During maintenance participants were prescribed energy intake sufficient to maintain weight loss, 300 min./wk. of physical activity, and asked to attend 60 min behavioral sessions/biweekly. Energy intake was assessed using 3-day diet records. Physical activity and sedentary time were assessed in a sub-sample (n=161) using an ActiGraph GT1X portable accelerometer. Rural/urban status was determined using the American Fact Finder web site maintained by the US Census Bureau. The Kruskal-Wallis nonparametric test was used to compare weight change, energy intake, physical activity, and sedentary time between rural and urban participants using SAS 9.4.

Results: Out of the 267 participants, 36 were considered rural dwelling. Weight change from baseline to 6 months was significantly greater in rural participants $-15.3 \pm 7.4\%$ compared to urban $-13.2 \pm 6.9\%$ ($P = 0.0359$). Weight change from baseline to 18 months was $-9.4 \pm 8.5\%$ and $-7.7 \pm 8.2\%$ ($P = 0.3397$) for rural and urban participants, respectively. Total energy intake at 6 months was significantly lower in rural participants (1349 ± 332 kcals) compared to urban participants (1510 ± 429 kcals) ($P = 0.0394$). There were no differences in physical activity or sedentary time between rural and urban participants.

Conclusions: Despite disparities in opportunities for physical activity and diet, rural dwelling individuals lose and maintain weight comparable to their urban counterparts.

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10:00 AM-11:00 AM

STAYING ON TRACK: THE ASSOCIATION BETWEEN PERCEIVED EFFORT, IMPORTANCE, AND SELF-WEIGHING BEHAVIOR

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Introduction: Consistent and frequent self-monitoring of body weight has been linked with improved weight loss outcomes in behavioral weight management programs, yet adherence to self-weighing can be challenging for participants. Preliminary qualitative research suggests that barriers to self-weighing includes factors such as perceived effort of self-monitoring and the impact of competing life priorities. The proximal association between these factors and self-weighing behavior during a weight management intervention, however, is unknown.

Methods: The current study examined the week-to-week association between perceived effort, relative importance of weight loss, and self-weighing during a 12-week, Internet-based weight management program. Participants were 74 overweight/obese adults (mean±SD age=50.6 ± 10.4 years, BMI=31.1 ± 4.4kg/m², 69% Female, 84% White) who logged onto a study website each week to submit self-monitoring information and to rate (on a 7-point Likert scale) perceived effort and importance of “staying on track” with program goals.

Results: On average, participants self-weighed 6.8±.87 days per week during the 12-week program. Mean effort throughout the intervention was 4.8 ± 1.6 and importance was 5.2 ± 1.5. A two-level longitudinal multilevel model demonstrated that self-weighing frequency decreased over time, $\beta=-.03$, $p\beta=.05$, $p=.035$, such that participants self-weighed on more days during weeks that they reported higher importance of staying on track with program goals. There was no association between perceived effort of staying on track and self-weighing, $p>.05$.

Discussion: The current study was the first to prospectively examine the impact of perceived effort and importance of staying on track with program goals for participants in a behavioral weight management intervention. Results demonstrated that self-weighed more frequently on weeks that they reported higher importance of staying on track, relative to other competing priorities. Given that self-weighing information and ratings were collected at the same time, these results could be interpreted in three ways: 1) greater relative importance of staying on track led to more frequent self-weighing; 2) on weeks where an individual engaged in less self-weighing, they decreased their ratings of importance of staying on track; 3) a third factor influenced both perceived importance and self-weighing. Future research should investigate whether perceived importance of staying on track can predict self-weighing frequency, and whether this may be an important treatment target during intervention.

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D238

10:00 AM-11:00 AM

TRANSLATING THE GROUP LIFESTYLE BALANCE PROGRAM FOR USE IN PEOPLE WITH ARTHRITIS: EFFECTS ON BIOMARKERS OF CARDIOMETABOLIC RISK

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Background: While weight loss is recommended for people with osteoarthritis, there are few evidence-based programs available to guide weight loss efforts. Co-morbid conditions including diabetes and cardiovascular disease are common among individuals with arthritis and it is well established that weight loss can also benefit these conditions. The Group Lifestyle Balance (GLB) ProgramTM is an effective program for weight loss among individuals with prediabetes or metabolic syndrome but it has not been evaluated in people with arthritis specifically.

Purpose: The purpose of this pilot study was to evaluate the efficacy of an adapted version of the GLB on markers of cardiometabolic risk in overweight individuals (Body Mass Index (BMI) ≥27 kg/m²) with arthritis.

Methods: A single-group, pre-post design was used to examine the effects of an adapted GLB program on cardiometabolic risk factors (fasting serum glucose, lipids, insulin, and high-sensitivity C-Reactive Protein [hs-CRP]). All participants (N=25) received the adapted GLB program and were asked to provide a fasting blood sample at baseline and 12-weeks. Insulin resistance was assessed using the Homeostasis Model Assessment calculation (HOMA-IR). Dependent t-tests and Wilcoxon sign rank tests were used to examine differences between baseline and 12-week values.

Results: Participants were primarily female (88%), white (84%), and college educated (68%) with a mean age of 68.9 [6.1] years. Most participants were obese (72%) with a mean percent body fat of 44.0 [5.1%] at baseline. The most commonly reported co-morbid conditions were hypertension (44%), heart disease (8%) and diabetes (28%). Baseline fasting glucose concentrations suggested 60% (n=15) of participants had levels associated with prediabetes and 8% (n=2) had levels corresponding to diabetes. Fasting glucose decreased significantly from baseline (median = 106.0 mg/dL; IQR = 18.5) to 12 weeks (median = 103 mg/dL; IQR = 16; p=0.046) and the effect was small (r = -0.25). Insulin resistance also declined significantly from baseline (median= 4.97; IQR=5.17) to 12 weeks (median = 4.60; IQR = 3.97; p=.025) and the effect was small (r = -0.30). There were no differences between baseline and 12-week hs-CRP, cholesterol (total, HDL and LDL), or triglyceride concentrations (p>0.05).

Conclusions: The Group Lifestyle Balance program may be an effective way to improve cardiometabolic risk factors among overweight and obese individuals with arthritis.

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10:00 AM-11:00 AM

WEIGHT SUPPRESSION IN BEHAVIORAL WEIGHT LOSS: RELATIONSHIP TO WEIGHT LOSS AND TREATMENT SATISFACTION

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Identifying predictors of suboptimal outcomes is crucial to enhancing the efficacy of behavioral weight loss (BWL). Weight suppression (WS), the difference between one's highest lifetime weight and current weight, may be an important factor in BWL given recent research implicating a biological drive towards weight regain following a loss. To elucidate the role of WS in treatment outcomes, this study examined the relationship between baseline WS and: 1) BMI before and after BWL, 2) weight loss during BWL, 3) difference between highest lifetime weight and weight after BWL, and 4) perceived treatment effectiveness and satisfaction.

Adults with overweight/obese BMI's (N=283) in a 12-month BWL program with a 24-month follow-up self-reported their highest lifetime weight. Weight was measured by research staff at treatment start ("baseline"), end of treatment, and follow-up. For categorical analyses, baseline WS of at least 10 lbs was considered "high WS;" weight suppression less than 10 lbs was considered "low WS."

Highest lifetime BMI was greater in adults with high WS (39.3 kg/m²) vs. low WS (35.4 kg/m²), $p < .001$. BMI did not differ at baseline, and was non-significantly greater in the high WS group at end of treatment (32.1 kg/m² vs. 30.8 kg/m², $p = .1$) and follow-up (33.0 vs. 32.2, $p = .3$). Controlling for baseline BMI, those with high WS lost *less* weight than those with low weight suppression at end of treatment (17.5 lbs vs. 24.7 lbs) and follow-up (9.9 lbs vs. 17.2 lbs), $p < .05$, but had a significantly *larger* difference between highest lifetime weight and weight at end of treatment (40.5 lbs vs. 27.4 lbs) and follow-up (32.1 lbs vs. 19.8 lbs), $p < .001$. Those with high WS reported lower perceived treatment effectiveness and satisfaction, $p < .05$.

Adults entering BWL with high WS reached a higher BMI during their lifetime than those low in weight suppression, but did not differ in BMI at the onset or end of BWL. Nonetheless, adults with high WS lost significantly less weight in BWL. Although the overall difference in their weight from highest lifetime weight to end of treatment/follow-up was greater than those low in WS, their reduced weight losses during treatment are still of concern, particularly given their lower treatment satisfaction ratings. Future research should examine changes in other health markers (e.g., blood pressure, blood glucose levels) during BWL by WS to further explore whether additional intervention is needed for those high in WS.

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10:00 AM-11:00 AM

WHAT CAN SOCIAL AND ENVIRONMENTAL CONTEXT TELL US ABOUT WEIGHT LOSS?

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Background. Behavioral weight-loss programs achieve variable success. It may be that environmental context impacts the success of weight-loss interventions, and that the social environment shapes reactions to environmental cues. Drawing from Self-Determination Theory and social-ecological approaches, this study examined how the home food-environment (i.e. low- and high-fat foods) and spousal support (i.e. autonomy support, directive support) interact to predict weight-loss outcomes.

Methods. Participants were randomized to a 6-month weight-loss intervention (Weight Watchers, WW) or a Self-Guided control condition (SG), and were weighed at baseline, three, and six months. Participants also completed baseline questionnaires assessing spousal provision of autonomy support (supporting individual choice) and directive support (concrete suggestions or advice) and reported on the number low- and high-fat foods in the home. Of the 130 participants, 113 provided data on key variables (86.9%).

Results. Low-fat foods were related to percent weight loss, but only in WW, and the direction of the association depended on spousal support provision. When autonomy support was high (+1SD), more low-fat foods at was associated with significantly greater percent weight loss at 3 months, $B = -.64$, $p < .001$. When autonomy support was low (-1SD), more low-fat foods was associated with weight gain at 3 months, $B = .30$, $p = .03$. This pattern replicated at 6 months: high autonomy support, $B = -.78$, $p < .01$; low autonomy support, $B = .34$, $p = .08$.

The same pattern occurred for directive support in WW: high directive support: 3 months, $B = -.48$, $p < .01$, 6 months, $B = -.57$, $p = .02$; low directive support: 3 months, $B = .44$, $p < .01$, 6 months, $B = .48$, $p = .04$.

No significant interactions between support and high-fat foods emerged predicting percent weight loss at 3 or 6 months in WW or SG.

Discussion. Low-fat foods predicted greater weight loss in the WW condition, but only when supports were high. It may be that the combination of intervention structure, healthy cues, and support creates a multilevel context conducive to health-enhancing behaviors. Further studies are needed to examine food availability and cue salience (e.g., home food placement) to parse potential reciprocal effects between intervention structure, food availability, food placement, and social supports. Such studies would shed light on what works—and when—and could be used to create adaptive, tailored interventions to promote weight loss.

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10:00 AM-11:00 AM

A QUALITATIVE STUDY OF CLINICIAN STRATEGIES TO MANAGE PATIENT EXPECTATIONS FOR PAIN MANAGEMENT AND OPIOID PRESCRIPTIONS

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Introduction: In response to the opioid crisis, states and health systems have recently overhauled opioid prescribing policies and guidelines. Given the shifts in perceptions of the risks of opioid prescribing, particularly for long-term use, clinicians are now tasked with adjusting patient expectations with regards to pain management and opioid use. To understand how providers are working with patients to navigate these changes, this qualitative study assessed clinician perceptions of patient expectations for pain treatment and strategies used to manage these expectations.

Methods: We conducted 60-minute semi-structured interviews with 11 providers from primary care, pain management, and rheumatology specialties from one academic medical system. Employing grounded theory methodology, we performed a qualitative descriptive analysis and coded transcripts for instances where informants discussed patient expectations and approaches to meeting or setting expectations for pain management. We organized the codes under several overarching themes around patient expectations for pain treatment including: treatment efficacy, prescription therapies, referrals, refills, function assessment, follow-up visits, side effects, and dosing.

Results: Providers perceived that patients anticipated pharmacologic treatments would eliminate their pain and that patients frequently had misguided beliefs about the efficacy of opioids. Providers employed several strategies to manage patient expectations, including: screening out patients seeking opioids alone, establishing goals around function instead of pain relief, having patients keep pain diaries to track improvements in pain, having frank conversations about realistic pain improvement prior to treatment, and relying on health system policies and resources, such as an outpatient opioid pharmacy program, to treat patients outside a clinician's established comfort zone. Clinicians also noted that negotiating expectations was extremely time-consuming, which was often a challenge, particularly in the primary care setting.

Discussion: Providers struggled with managing patient expectations around opioids, particularly given the time burden. These findings elucidate opportunities for systemic approaches to educate clinicians on effective strategies for managing patient expectations for pain management and to reduce the burden of opioid prescribing on clinicians.

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D242

10:00 AM-11:00 AM

BMI, SELF-EFFICACY, AND PHYSICAL PERFORMANCE AS RISK FACTORS FOR PAIN AMONG INDIVIDUALS WITH KNEE OA

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Background: As individuals age, the risk of developing knee osteoarthritis (OA); a degenerative, painful disease increases, reducing functional mobility and effecting health-related quality of life. Understanding the risk factors (self-efficacy, physical performance, and BMI) associated with knee osteoarthritis pain holds promise for improving treatment outcomes and patient health-related quality of life.

Methods: A systematic literature review was conducted, following 2009 PRISMA guidelines and an analysis of reviewed studies. Search criteria included: body mass index (BMI), self-efficacy, physical performance, men and women, knee osteoarthritis, knee OA pain and intervention/clinical studies. Published studies were reviewed from 2006 – 2017 (July), using PubMed and Google scholar databases.

Results: Participants in the studies included both men and women. Studies included primarily African Americans, non-Hispanic Whites. However, results focused on outcomes related to pain physical functioning, associated with BMI and self-efficacy without a specific focus on sex/gender group differences or race/ethnic group comparisons. Findings from the studies revealed meaningful differences in weight status (BMI), self-efficacy and pain resulting in a decrease in performance as a function of increasing levels of body weight. Weight was measured greater than or equal to 24kg/m². Self-efficacy was operationalized as one's confidence to perform a task(s) (e.g. very uncertain-very certain). Results also indicated long term benefits associated with managing self-efficacy and BMI. Moreover, mindfulness was found to have a role; how individuals cope with knee OA pain was impacted by mindfulness (e.g. depression, stress, self-efficacy).

Conclusion: Differences in BMI, self-efficacy, and physical performance are risk factors in knee OA pain for individuals. Such findings are relevant for addressing health and health disparities among the adult population.

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10:00 AM-11:00 AM

DEVELOPMENT OF THE PAIN RESPONSE STYLE INVENTORY: A NEW MEASURE FOR EXAMINING AMBIVALENCE TOWARD CHRONIC PAIN TREATMENTS

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Over the previous half-century, the framework for chronic pain management has expanded beyond the biomedical perspective to include psychosocial treatments that fall within the cognitive-behavioral tradition. Patients with chronic pain, however, often perceive their pain as a problem requiring medical interventions. Enhancing motivation to engage in cognitive-behavioral treatment has therefore been a major focus in the research literature, much of which has been informed by Motivational Interviewing (MI) and the Transtheoretical Model. At present, there is a paucity of empirical evidence supporting the efficacy of motivational enhancement in chronic pain. Research has also largely overlooked the importance of ambivalence, a core aspect of MI, which reflects patient interest in treatments targeting behavior change. The objective of the present study was to develop and test a new instrument, the Pain Response Style Inventory (PRSI), which was designed to measure ambivalence toward psychosocial pain treatment. Data were examined from 398 community-dwelling participants with chronic pain. The majority of participants identified as non-Hispanic White (80%), were female (61%), had completed a bachelor's degree or some college (68%), and were married or living with a partner (57%). The most frequently reported pain location was the lower back (43%), and average duration of pain was 7.9 years (*Median* = 5; *SD* = 7.0). Participants completed the PRSI candidate item pool and other measures of pain-related functioning, including measures of pain acceptance, pain-related anxiety, depression, and physical and psychosocial disability. The final version of the PRSI consisted of 19 items, which were best represented by a three-factor structure that showed good internal consistency (Cronbach's $\alpha = .92$). A set of simultaneous regression analyses for the three PRSI factors was performed to evaluate the variance accounted for in measures of pain-related functioning. Results showed that the PRSI had significant direct effects on these measures, after controlling for age, sex, usual pain intensity, and pain duration as well the Pain Stages of Change Questionnaire, a theoretically similar measure. The overall results indicated that the PRSI was capable of assessing ambivalent attitudes about chronic pain treatment and had good psychometric properties. The PRSI demonstrates promise for use in future studies assessing the relationship between attitudes and treatment response.

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10:00 AM-11:00 AM

INCREASING THE REACH OF PAIN PSYCHOLOGY IN THE VA: VETERAN EXPERIENCES OF A FOUR-WEEK, MANDATORY COGNITIVE BEHAVIORAL CLASS

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Approximately 66% of Veterans report chronic pain, and 10% (Q4 FY 2017) of Veterans receiving care at the VA are prescribed opioid therapy despite limited efficacy of opioids for chronic pain and potential harms including escalating rates of opioid overdose deaths, opioid misuse, and endocrine and immune dysfunction. Therefore, initiatives to promote safe, effective, and non-pharmacological pain management are a priority in the VA. The psychology and pharmacy led Chronic Pain Care Clinic is an innovative solution, designed to optimize chronic pain management by delivering education about the biopsychosocial model of chronic pain, promoting the use of behavioral coping strategies and utilizing extended and frequent appointments with clinical pain pharmacists. In addition to 45-minute monthly visits with a pharmacist, Veterans who enroll in the clinic are required to attend a four-week, cognitive behavioral therapy (CBT) class led by clinical psychologists. Veterans who would not typically enroll in pain psychology services often present to classes with low self-efficacy to manage pain with non-opioid therapies, and may be less open to use of CBT strategies to manage pain. The purpose of this program evaluation is to explore the uptake of the CBT class. Class topics include the following: 1) introduction to the biopsychosocial model of pain, 2) relaxation training, 3) activity pacing, and 4) cognitive restructuring. Participants were administered an anonymous survey between April, 2017 and November, 2017 after each class. This resulted in 188 completed surveys. Veterans were asked to rate items on a five-point Likert scale from "not at all" to "very much." Across all classes, Veterans responded that they "learned something new about pain" ($M = 3.60$, $SD = 1.18$), found the class "helpful" ($M = 3.76$, $SD = 1.07$), and "plan to use the information to manage pain" ($M = 4.02$, $SD = .93$). Veterans who had completed all four classes reported they "have used information presented in an earlier class to manage pain" ($N = 35$, $M = 4.14$, $SD = .84$). Participants rated the skills based classes (relaxation training, activity pacing and cognitive restructuring) as more useful compared with the psychoeducation class. Overall, results indicate Veterans benefited from a four-week, mandatory class designed to promote CBT strategies to manage pain. This suggests a potential for broad reach and benefit to Veterans who may not seek out pain psychology services.

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10:00 AM-11:00 AM

A PICTURE IS WORTH A THOUSAND WORDS: USING PHOTOVOICE TO UNDERSTAND EXERCISE CONTEXT EXPERIENCED BY RURAL WOMEN CANCER SURVIVORS

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Background: Rural cancer survivors (CS) suffer greater physical and mental health risk compounded by a greater risk of insufficient exercise (EX), when compared to non-rural CS. Adapting efficacious EX behavior change programs for rural implementation is needed yet requires a deeper understanding of the context. Photovoice is an innovative yet infrequently used strategy for achieving such understanding. Hence, our study aim was to use photovoice to better describe exercise barriers and facilitators experienced by rural women CS.

Methods: Women CS (n=17) were provided a cellphone or digital camera and notepad for notes. They were asked to take photos of EX barriers and facilitators in their community for one week. Devices were then returned, images downloaded, and photo discussion groups completed (participants explained their photos, told their stories, and brainstormed solutions). Group transcripts and images were imported into NVivo for coding by two independent coders and analysis.

Results: Most participants were White (82.4%). Mean age was 61.9 ± 11.6 years, education was 15.2 ± 2.8 years, and time since cancer diagnosis was 33.2 ± 24.1 months. Cancer types included breast (n=8), bladder (n=2), lung (n=2), or single occurrence of other (n=5). All were post-primary treatment. The 17 participants providing photos participated in a discussion group session (3 to 8 participants per session). The most frequent barriers included safety (n=119 comments), weather (n=73), negative feelings about EX (n=64), cancer-specific adverse effects (n=60), low motivation (n=55), and location (n=54). Photovoice images and resultant discussions revealed aspects specific to the rural context: 1) safety - wild animals and road design, 2) weather - prevented driving to an EX facility, 3) negative feelings - terrain perceived as too difficult to walk, and 4) location - greater travel time required for daily activities limited time available for EX. The most frequent facilitators included local EX resources (e.g., parks, schools; n=187 comments), multiple options (e.g., gardening; n=76), EX support (e.g., neighbors, family; n=67), access (e.g., if done at home; n=61), and enjoyable (e.g., lake, dance videos; n=52).

Conclusions: Several aspects of the rural context present unique challenges for rural CS. EX program implementation in this setting requires novel community-wide approaches to address these barriers while also capitalizing on EX facilitators.

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D246

10:00 AM-11:00 AM

REGULAR DANCING INCREASES OLDER LATINOS' PHYSICAL ACTIVITY

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Older Latinos are expected to constitute 20% of the older adult population by 2050. Physical activity (PA) can influence potential declines in the health outcomes of physical and cognitive function, unfortunately, Latinos aged 65–74 are 46% less likely to engage in leisure time PA than older non-Latino whites. Also, little is known about PA maintenance among ethnic minorities compared to non-Latino whites. Dance is a widely popular form of PA among Latinos and holds considerable promise as a culturally appropriate form of PA. This study used a randomized controlled trial with randomization at the level of the individual to the BAILAMOS© dance program or a health education control group. BAILAMOS© is a 4-month dance intervention, and has a 4-month maintenance dance program. Physical activity in this study was measured with the CHAMPS Physical Activity Questionnaire for Older Adults, a change-sensitive PA scale. Measurements were taken at months 0 (baseline), 4 (post-intervention), and 8 (post-maintenance intervention). General linear model analysis adjusting for age, sex, education, income, and health status revealed significant mean changes in leisure time PA between Dance participants and Health Education participants post-intervention ($p < .05$), with changes approaching significance post-maintenance intervention ($p = .07$). It appears that attempts to increase the PA of older Latinos should use culturally appropriate forms of PA. Older Latinos understand the physical and psychological benefits of exercise. They value functional independence, and relate physical fitness to feeling healthy and being able to perform normal activities with ease. However, this understanding has not led to their adoption and maintenance of PA. Dance has long been an important form of socialization, entertainment, and leisure in Latin cultures, and appears to be an important way to get older Latinos more physical activity.

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D247

10:00 AM-11:00 AM

THE FEASIBILITY OF A REMOTE PHYSICAL ACTIVITY PROGRAM FOR ADULTS WITH ALZHEIMER'S DISEASE AND THEIR CAREGIVERS

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Individuals with Alzheimer's Disease (AD) are more likely to be physically inactive, leading to further cognitive and functional decline. Increased moderate-to-vigorous physical activity (MVPA) in individuals with cognitive impairment has been associated the maintenance of cognitive and functional performance. One major barrier to MVPA for adults with AD, is dependence on a caregiver, typically a spouse or adult child, to plan, transport and supervise their efforts to be physically active. Home-based exercise programs could potentially overcome these barriers. However, proven scalable home-based intervention strategies are not available for this population. The purpose of this study was to evaluate the feasibility of a group video conference approach for increasing MVPA in adults with AD and their caregivers. Participants and their caregiver attended 30-minute group exercise sessions 3 times a week, and individual support sessions once a month, for 12 weeks. Exercise sessions and support sessions were delivered in participant homes by video conferencing on a tablet computer. Nine participants (74.1 ± 10.2 years of age, 55.6% female) and their caregivers (67.4 ± 13.2 years of age, 66.7% female) enrolled and seven participants and caregivers completed the 12-week intervention. On average participants attended 77.2% of the group exercise and caregivers attended 78.3% of group exercise sessions. All participants reported that they enjoyed the exercise program and would be willing to do it again. Fifty seven percent of caregivers reported that they felt more confident about getting exercise in on their own, and 42.9% felt more confident about helping the person they care for get exercise in. Group-based exercise sessions delivered remotely may be a feasible approach for delivering exercise to adults with AD and their caregivers.

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D248

10:00 AM-11:00 AM

#MCSCOTSMOVE: A STRATEGY FOR INCREASING ENGAGEMENT IN PHYSICAL ACTIVITY IN THE SELFIE GENERATIONJeremy Steeves, PhD MPH¹, Matthew Redaja, Student¹, Elizabeth Anderson Steeves, PhD, RD²¹Maryville College, Maryville, TN; ²University of Tennessee, Knoxville, TN**Purpose:** The purpose of this study was to assess the feasibility of using a social media platform to engage students at a liberal arts college in a physical activity (PA) promotion campaign.**Methods:** In fall of 2016, 23 students engaged in a social media based PA promotion pilot campaign called #MCScotsMove. As part of #MCScotsMove, students downloaded the social media application, Instagram, on their phones. For one week (7 days) students were instructed to photographically document their daily PA sessions and post pictures, along with brief captions, and locations on Instagram using the #MCScotsMove and #My150 hashtags. Demographics, social media app use, #MCScotsMove engagement, change in PA levels, and knowledge of the PA guidelines for Americans were assessed in this study.**Results:** Twenty-three students (61% male, 48% athletes, average age 21.2 ± 1.9) participated in the 7-day pilot of #MCScotsMove. The majority of students (69%) reported using social media apps frequently (1–9 times/day) or very frequently (10+ times/day). The three most popular apps used by students were Snapchat, Instagram and Facebook. Students posted as part of the #MCScotsMove campaign on average 5.0 ± 1.2 of 7 days. The week before the campaign students reported 460.9 ± 309.3 min/week of PA, which was not significantly different than PA levels during the #MCScotsMove campaign (485.7 ± 277.1 min/week). Before the #MCScotsMove campaign only 43% of students knew the PA guidelines recommended 150 min/week of moderate-to-vigorous PA for adults, but 87% knew the guidelines after the campaign.**Conclusion:** The majority of students in this study habitually used social media, and were willing to engage in a social media based PA promotion campaign, which increased their knowledge of the recommended levels of PA needed to promote health. Based on self-report, the majority of students in this study were meeting the recommended levels of PA. Through additional mining of the Instagram images, captions, and locations collected during this pilot campaign, a qualitative understanding of what college students are doing in terms of PA, with whom they do PA (friends, alone, teammates, etc), and locations where students regularly engage in PA could be identified.

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D249

10:00 AM-11:00 AM

FACTORS INFLUENCING WALKING AND SEDENTARY BEHAVIOURS IN PATIENTS SUFFERING FROM SEVERE MENTAL ILLNESSAhmed-Jerome Romain, PhD¹, Samuel St-Amour², Antony D. Karelis³, Amal Abdel-Baki²¹University of Montreal Hospital Research Centre (CRCHUM), Montreal, PQ, Canada; ²University of Montreal Hospital Research Centre, Montreal, PQ, Canada; ³Universite du Quebec à Montreal, Montreal, PQ, Canada**Introduction:** Physical inactivity and sedentary behaviours are important modifiable risk factors to prevent cardiovascular diseases in individuals with severe mental illness (SMI). Walking is an effective way to initiate physical activity (PA), however, factors involved in walking and sedentary behaviours are not well known in this population.**Methods:** Cross-sectional study including ISMIs who completed the Global Physical Activity Questionnaire to assess their walking behaviour and sedentary time. Participants were also evaluated on the perception of their physical activity status, and their stages of change.**Results:** Ninety-one participants (50 males, mean age: 31.5 ± 9.9 years old, mean body mass index (BMI): 26.0 ± 7.1 kg/m²) with psychosis were recruited for this study. They walked 379.9 ± 433.7 min per week and spent 346.9 ± 210.0 min per day in a sedentary state. Total walking was correlated with the perception of physical activity status ($r = 0.29$; $p = 0.005$). Also, participants in post-action stages had greater perception of their physical activity status ($p < 0.0001$). When we used a model a regression, perception of PA status ($\beta = 0.27$; $p = 0.009$), cultural group ($\beta = -0.23$; $p = 0.03$), and age ($\beta = 0.20$; $p = 0.04$) were significantly associated with walking. None of the variables considered had an association with sedentary time.**Discussion:** In ISMIs, perception of physical activity and stages of change were found to be related to walking behaviour. Given its association with walking, the perception of SMI regarding their PA should not be neglected.

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D250

10:00 AM-11:00 AM

IMPACT OF LATIN DANCE ON EPISODIC MEMORY AND EXECUTIVE FUNCTION AMONG LATINOS WITH COGNITIVE IMPAIRMENT

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The number of Latinos in the United States with Alzheimer's disease (AD) is projected to increase by 850% by 2060. Currently, there is no cure for AD, however evidence suggests that engaging in physical activity may be effective at reducing the risk of cognitive decline and may reduce the risk of dementia. The purpose of the present study was to determine if a Latin dance program would have an impact on episodic memory and executive function among older Latinos with cognitive impairment. Spanish-speaking older Latinos [N=21, 75.4 ± 6.3 years old, 76.2% female, 22.4 ± 2.8 Mini Mental State Examination score] were randomized into a 4-month, twice-weekly dance intervention or to a wait-list control group. Participants completed a cognitive battery that included the Logical Memory test I (immediate recall) and II (delayed recall), and the Stroop test word and color test at baseline and at 4-months posttesting. Repeated measures ANOVA were used to determine overall time and interaction effects. Cohen's *d* values were subsequently calculated as an estimate of the effect sizes. Results indicated no significant time or interaction effects for the logical memory tests or the Stroop tests; however, Cohen's *d* values showed positive changes favoring the dance group. For example, there was a non-significant effect size for Logical Memory test I, (*d* = .14) and a medium effect size for Logical Memory II, (*d* = .69), driven by higher scores in the dance group and a decrease in scores in the control group at 4-months, ([Dance, Baseline, 4.80 ± 2.66; 4-months, 6.38 ± 3.21]; [Wait-list, Baseline, 6.00 ± 4.07; 4-months, 5.18 ± 3.16]). For the Stroop word test, there was a small effect size (*d* = .33) driven by higher scores in the dance group at 4-months, ([Dance, Baseline, 34.91 ± 12.31; 4-months, 40.97 ± 12.50]; [Wait-list, Baseline, 35.18 ± 16.96; 4-months, 36.36 ± 13.03]). Cohen's *d* values for the Stroop color test indicate a medium effect size (*d* = .42) driven by higher scores in the dance group and a decrease in scores in the control group at 4-months, ([Dance, Baseline, 10.32 ± 7.50; 4-months, 13.71 ± 6.58]; [Wait-list, Baseline, 11.91 ± 10.31; 4-months, 11.45 ± 5.37]). Findings indicate that participation in a Latin dance program may improve episodic memory and executive function among older Latinos with cognitive impairment when compared to a wait-list control group. Latin dance may be a culturally appropriate type of physical activity that may slow cognitive decline among older Latinos with cognitive impairment; however, larger randomized controlled studies are warranted for generalizability of findings.

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10:00 AM-11:00 AM

IMPLEMENTATION OF EXERCISE REFERRAL FOR TREATMENT OF MAJOR DEPRESSIVE DISORDER

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Purpose: Despite its proven efficacy in research trials, exercise is rarely used as a treatment for Major Depressive Disorder (MDD) in real-world clinical settings. Clinicians cite a lack of training in exercise prescription as a barrier, and indicate a preference for referral to community resources. The purpose of this project was to assess the feasibility and preliminary efficacy of referral from primary care to a research-tested exercise program in the treatment of MDD.

Methods: Patients diagnosed with MDD in a primary care clinic were provided a written prescription by their provider and referred to a research-tested exercise program. Patients met weekly for 12 weeks with an exercise specialist at a community recreation center. In addition, patients received access to the recreation center and a Fitbit ChargeHR to monitor their activity. Depressive symptoms were assessed on a weekly basis using the PHQ-9.

Results: Of the 38 eligible patients, 31 patients have been referred to the program and 19 patients have been enrolled. Patients have attended 73.75% of supervised exercise sessions. Based on Fitbit data, patients have engaged in an average 136.80 minutes of moderate-vigorous physical activity per week ("Very Active" minutes + Fairly Active" minutes). Depressive symptoms, as assessed by the PHQ-9, reduced from 9.11 at baseline to 4.61 at last observation (*p* < 0.01).

Conclusions: Clinic referral rates demonstrate providers' willingness to refer patients for an exercise treatment program. Patient adherence data indicates exercise referral is a feasible intervention in patients with MDD. Furthermore, patients experienced a significant reduction in depressive symptoms demonstrating the potential of referral to exercise as a viable treatment option.

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D252

10:00 AM-11:00 AM

IN EXERCISE PLANS, THE DEVIL IS IN SOME OF THE DETAILS: PLAN COMPONENT SPECIFICITY AND SUBSEQUENT PHYSICAL ACTIVITY

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Background: Implementation intentions (IIs) are plans made in the form of "if-then" contingencies and have been shown to promote physical activity (Gollwitzer & Sheeran, 2006). However, not all plans are equally effective. Recent research indicates that the specificity of plans may moderate their effectiveness, and that specificity may be more beneficial in plans designed to cope with barriers (coping plans) than plans for when, where, and how one will exercise (action plans). To better understand the role of specificity in IIs, the present study examined whether specificity of particular components of coping and actions plans (i.e., activity, moment, place, and duration) differentially predict physical activity.

Method: 151 undergraduates (72.9% female, 65.1% non-Hispanic white, mean age = 19.9) completed baseline questionnaires and a short II intervention, in which they formed 3 action plans and 3 coping plans for physical activity. Pairs of independent coders coded the IIs for specificity in activity, moment, place, and duration. Participants self-reported physical activity one and two weeks later.

Results: Multivariate regressions were used to examine the effects of the 8 components of coping and action plan specificity on physical activity one and two weeks post-baseline. Controlling for baseline activity and intentions, of the 8 specificity components, only moment specificity of coping plans was associated with significantly higher physical activity one week post-baseline ($\beta = .24, p = .006$). Activity specificity of action plans was associated with marginally lower physical activity one week post-baseline ($\beta = -.18, p = .098$). No specificity components remained significant predictors two weeks post-baseline (*p*'s > .10).

Conclusions: People who were specific about the moment in which they would enact a coping plan were more physically active in the subsequent week than those who were less specific. However, those who were very specific about which activity they would engage in were less physically active. Thus, the value of highly specific IIs for physical activity may depend on the type of plan and the plan component being specified. No specificity components predicted physical activity two weeks post-baseline, suggesting that the effects of specificity may be limited to short-term behavior. Better understanding the plan components that matter for successful behavior change will support the development of more effective planning interventions.

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10:00 AM-11:00 AM

LOW BODY IMAGE ASSOCIATED WITH FEWER MINUTES OF MVPA IN FEMALE UNIVERSITY STUDENTS

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Evidence indicates declines in body satisfaction and image as well as physical activity during college years, which may be more pronounced in overweight/obese females. Body satisfaction has been associated with achieving moderate- to vigorous physical activity (MVPA) guidelines, thus understanding this relationship could better inform interventions designed to increase MVPA in this population.

PURPOSE: To examine the relationship between body image, objective measures of MVPA (average minutes per day) and gender in overweight/obese university students.

METHODS: 149 university students (80% female; mean age=23.2, SD=3.8; mean BMI=31.9 kg/m², SD=4.3) completed baseline clinic-measured weight, demographic questions and the *Body Image Quality of Life Inventory (BIQL)*. Participants also wore an Actigraph activity monitor (wGT3X-BT) for 7 days at baseline. Valid wear-time for inclusion into the analyses was a minimum of 4 days and 10 waking hours (600 minutes). Body image was dichotomized into “high” and “low” based on the median *BIQL* score (64.84) of the sample.

RESULTS: Average minutes of MVPA/day for males (41.33 ± 4.8) were higher than females (31.04 ± 2.2; $p = 0.063$). Females with low body image had significantly ($p=0.004$) lower average minutes of MVPA per day (31.8 ± 2.6) than males with low body image (45.1 ± 7.3), whereas no statistical differences ($p=0.49$) were found between females (32.3 ± 3.5) and males (37.6 ± 6.4) with high body image. Simple linear regressions indicated that gender significantly predicted lower average minutes of MVPA per day, $F(1, 71)=4.41, p=0.039$, in those with low body image, but not in those with high body image. When controlling for age, race, ethnicity and BMI, gender was not predictive of averages minutes of MVPA per day in those with both low ($p=0.071$) and high ($p=0.7$) body image.

CONCLUSION: In this population of college students low body image, irrespective of weight status, was associated with fewer average minutes of MVPA per day in females, but not in males. Interventions targeting increasing MVPA in females may need to provide additional support for those with low body image. Future research is needed to investigate the effectiveness of promoting positive body image as a means of increasing MVPA in college females experiencing low body image.

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10:00 AM-11:00 AM

MOTIVATORS OF AND BARRIERS TO PHYSICAL ACTIVITY AMONG PARENTS OF ADOLESCENT CHILDREN

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Background: Current guidelines recommend at least 150 minutes per week of moderate-intensity physical activity (PA). Despite these guidelines, only 21% of adults get the recommended amount of PA. The lack of PA in adults is particularly concerning given the health benefits of such activity. Active adults have longer lives and lower risk for chronic conditions (e.g., obesity, hypertension, and some cancers). Given the relationship between PA and chronic conditions, it is important to conduct research aimed at understanding how to improve PA among adults, particularly parents who serve as role models for their adolescent children. The purpose of the study was to investigate (1) if motivators to engage in PA predicted increased PA, (2) if barriers to engage in PA predicted decreased PA, and (3) if these relationships differed by sex, age, education, and race/ethnicity.

Methods: The study sample included 1,839 adults from the Family Life, Activity, Sun, Health, and Eating (FLASHE) study. The vast majority were non-Hispanic White (66.8%), were female (72.1%), and were aged 35 to 59 years (83.7%). All were parents of adolescent children. A hierarchical regression was used to examine the relationships under investigation.

Results: The final hierarchical regression model to examine whether demographic variables (i.e., sex, age, education, and race/ethnicity), motivators to engage in PA (e.g., believing PA is an important thing to do), and barriers to engage in PA (e.g., not wanting to sweat) predicted PA frequency was significant, $F(5, 1779)=15.91, p<.001, R^2=.104, \text{adjusted } R^2=.098$. Adding the motivators in block 2 to the demographic variables resulted in a significant change to the overall model, $\Delta R^2=.051, \Delta F(4, 1779)=24.05, p<.001$ and adding the barriers in block 3 also resulted in a significant change, $\Delta R^2=.052, \Delta F(5, 1779)=20.49, p<.001$. The results revealed that feeling bad without PA and believing PA is an important thing to do were significant positive predictors of PA and not liking to engage in PA and not being athletic were significant barriers to PA. No other variables were significant predictors of PA.

Conclusions: The results of the study have implications for interventions aimed at increasing PA in adults, particularly adults who are parents to adolescent children. It would be appropriate to design these interventions to help adults increase their PA using (1) motivating strategies focused on the importance of PA and how going without PA makes them feel, and (2) strategies to overcome barriers like lack of athleticism and not liking PA.

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D255

10:00 AM-11:00 AM

OLDER LATINOS' PERCEPTIONS OF A LATIN DANCE PROGRAM

Jacqueline Guzman, B.S, B.A, David X. Marquez, PhD

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Latinos have low physical activity levels but high morbidity and mortality rates. It is currently unknown how older Latinos will feel after participating in a dance intervention as a way to be active. The purpose of this study was to analyze older Latinos' perceptions of a Latin dance program (BAILAMOS®). A randomized controlled trial was conducted, and participants were randomized to either a 4-month dance program or a 4-month health education program. Dance group participants also participated in a 4-month maintenance program. Participants: (1) were aged > 55 years old; (2) self-identified as Latino/Hispanic; (3) were able to understand Spanish; (4) participated in < 3 days/week of aerobic exercise; (5) were at risk for disability; (6) had adequate cognitive status as assessed by the Mini Mental State Examination (>14/21). Participants completed program evaluation forms on the last day of the 4-month dance program (n=103) and at the end of the 4-month maintenance program (n=89). After the 4-month dance program participants had high ratings of satisfaction (1 = strongly agree and 4 = strongly disagree) for: general reaction to the program (M=1.27; SD=.57); general reaction to dance instructor (M=1.28; SD=.54); physical satisfaction level (M=1.37; SD=.64); and felt that the program was worth it (M=1.0; SD=.00). On another scale of 1–4, (1 = strongly disagree and 4 = strongly agree) participants had high ratings of satisfaction for: adequate increases in dance difficulty level (M=3.61; SD=.74); likelihood to keep dancing BAILAMOS dances (M= 3.48; SD= .72); and likelihood of recommending BAILAMOS to family and friends (M=3.81; SD= .47). At the end of the 4-month maintenance program ratings were virtually the same: general reaction to the program (M=1.29; SD=.67); general reaction to dance instructor (M=1.38; SD=.64); physical satisfaction level (M=1.34; SD=.61); felt that the program was worth it (M=1.0; SD=.16); adequate increases in dance difficulty level (M=3.59; SD=.62); likelihood to keep dancing BAILAMOS dances (M= 3.37; SD= .80); and likelihood of recommending BAILAMOS to family and friends (M=3.79; SD= .51). Based on the obtained results we conclude that participants who completed the program had very positive perceptions about the BAILAMOS® program.

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10:00 AM-11:00 AM

PERCEIVED BENEFITS, SOURCES OF MOTIVATION, AND FACILITATORS OF PHYSICAL ACTIVITY AMONG LATINAS IN LOW-INCOME CLINICS

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Background: Latinas are one of the least physically active ethnic minority groups in the US, yet we know little regarding what facilitates and motivates them to stay active, and what role health concerns and the healthcare setting might play in helping them to lead active lives. This qualitative study aimed to understand how low-income community clinics could be capitalized on as settings for the promotion of PA among Latina women, specifically focusing on women's perceived benefits, sources of motivation, and facilitators of PA within these settings.

Methods: In-depth individual interviews were conducted with 24 Latina patients in two low-income community clinics in San Diego, California. Data were collected in English and Spanish, transcribed, translated to English, and analyzed using structural coding procedures, under a Thematic Analysis framework. Two investigators jointly coded each interview using a codebook. Codes were then compared and grouped into themes.

Results: When asked about benefits, the large majority of women mentioned health. The most frequently reported sources of motivation were staying healthy or recovering health, along with losing weight or avoiding weight gain. Family and loved ones were also important sources of motivation, as many exercised to be a role model, and to live longer lives with their loved ones. Those reporting the most physical activity (PA) were less likely to report being motivated by avoidance of weight gain, and more likely to be motivated by previous personal or family experiences with inactivity and related illnesses. Support from family and friends was the most commonly reported facilitator of PA, while support from healthcare professionals and the healthcare setting were not salient facilitators.

Conclusions: Health was a predominant topic in themes related to benefits and motivation for PA. However, the healthcare setting and healthcare professionals were only infrequently identified as facilitators. This may be indicative of a need and also an important opportunity to strengthen and capitalize on the role of health clinics for the promotion of PA among Latinas. Additionally, this study strengthened the evidence supporting the need to include family members or the concept of family in the promotion of PA among Latinas. Moreover, results revealed the potential usefulness of tailoring program materials to include information pertaining previous personal and family history of inactivity and related illnesses.

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D257

10:00 AM-11:00 AM

PRE-EXISTING PAIN SYMPTOMS AND BELIEFS MAY LIMIT PA IMPROVEMENT IN PATIENTS WITH CHRONIC LOW BACK PAIN

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INTRODUCTION: Moderate to vigorous physical activity (MVPA) provides symptom relief for individuals with chronic low back pain (CLBP). However, intrapersonal factors like pain symptoms and maladaptive pain-related beliefs (catastrophizing and locus of control), as well as baseline levels of physical activity, may influence the effectiveness of interventions targeting increases in MVPA.

PURPOSE: The aim of this study was to investigate the influence of baseline levels of pain symptoms, pain-related beliefs, and physical activity on changes in MVPA over a 12-week intervention.

METHODS: Fifty-seven adults with chronic low back pain (49% male; 43 ± 10 years old) simultaneously wore ActiGraph GT3X+ and activPAL3 accelerometers for 7 days to assess MVPA, and completed the McGill Pain Questionnaire (MPQ), Pain Locus of Control Scale, and the Pain Catastrophizing Scale pre- and post a 12-week physical activity intervention. For the intervention, participants were randomized to receive a Fitbit alone or in combination with motivational interviewing, or were assigned to a wait-list control condition. Data from the accelerometers was processed using Sojourns Including Posture (SIP) methods to calculate average MVPA minutes/day for both time points. A regression analysis was performed with intervention group, baseline MVPA levels, pain intensity (MPQ), pain catastrophizing, and locus of control included as predictors and changes in MVPA as the outcome.

RESULTS: The overall regression model was significant ($F_{(5, 29)} = 4.35, p = 0.002$), with lower levels of baseline MVPA ($\beta = -0.46, p = 0.001$) and a less internally focused locus of control ($\beta = -0.25, p = 0.05$) significantly predicting increases in MVPA. While non-significant, lower levels of pain catastrophizing ($\beta = -0.29, p = 0.07$) and lower symptom severity ($\beta = 0.28, p = 0.08$) may have also contributed to improvements in MVPA over the intervention.

CONCLUSION: Consistent with previous research, these results suggest that factors related to symptom severity and pain-related beliefs may influence the effects of interventions targeting increases in health-promoting behaviors, like physical activity. Understanding the influence of these factors may improve the efficacy of future similar intervention trials. Data regarding patient knowledge of physical activity as treatment and level of trust in its prescription may be especially beneficial for changing these determinants.

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D258

10:00 AM-11:00 AM

SOCIODEMOGRAPHIC DIFFERENCES IN THE RELATIONSHIP BETWEEN THE NEIGHBORHOOD ENVIRONMENT AND OBESITY-RELATED BEHAVIORS

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Background: In the US, only about a quarter of children meet physical activity (PA) guidelines, and children have a healthy eating index (HEI) that is relatively low compared to the dietary guidelines. The neighborhood environment has been shown to influence both PA and dietary habits in children. Specifically, having better access to parks has been consistently associated with greater PA, and some studies have shown that more access to more healthy food retail or less access to less healthy food retail is associated with healthier eating habits. However, few studies have examined whether sociodemographics interact with neighborhood environments to impact obesity-related behaviors in youth with overweight/obesity.

Objectives: To examine the association of, and interactions between, socio-demographics and neighborhood environmental correlates with objective PA and the HEI.

Methods: A subsample of children ($n = 116$) with BMIs $> 85^{\text{th}}$ percentile for sex and age participating in a family-based weight loss program in St. Louis, MO/Seattle, WA, participated in an ancillary study that included Geographic Information Systems (GIS) measures. Information on obesity-related behaviors obtained at baseline was used in the present analysis. Accelerometry data were collected to assess daily moderate to vigorous physical activity (MVPA). Child HEI scores were obtained from up to 3 days of 24-hour food recalls. Objective measures of the neighborhood environment were collected including park counts, distance to school, and counts of healthy and unhealthy food retail outlets. Additionally, parents provided information about socio-demographics (child age, child race/ethnicity, household income). Generalized linear models examined main effects and interactions of three intrapersonal and four environmental factors on average daily MVPA and the HEI.

Results: On average, participants attained 46.7 min/day ($SD = 21.8$) of MVPA and had a HEI of 60.2 ($SD = 9.5$, range 0–100). Higher age was associated with less PA and a higher HEI. There were no significant relations between the neighborhood environment and PA or HEI. However, park counts and household income interacted for daily MVPA ($b = -4.98, p = 0.044$), children with lower income and more parks near their home engaged in less PA.

Conclusions/Future Plans: Among this sample of treatment-seeking children with overweight/obesity, there were no significant direct associations between neighborhood environment factors explored and corresponding behaviors, but unexpectedly lower income children with higher number of parks nearby the home were associated with less PA, when compared to higher income children. Further work should be done examining these sub-group differences in order to better inform strategies to promote physical activity and healthy eating in children.

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D259

10:00 AM-11:00 AM

THE INFLUENCE OF THE SOCIAL ENVIRONMENT ON ETHNIC MINORITIES' CYCLING BEHAVIOR: AN EXPLORATORY STUDY

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Though cycling offers many physical and mental health, environmental, and economic benefits, rates of cycling are low among ethnic minorities and are linked with physical inactivity-related health disparities. At present there is limited research regarding the influence of the social environment on cycling participation among ethnic minorities. This study examined the influence of family and friends in supporting or hindering cycling among ethnic minorities

Methods: An online survey distributed to members of minority cycling clubs used open-ended questions to examine different aspects of their cycling participation, including the role of one's family and friends in supporting/hindering involvement in cycling. Basic demographic information was also collected. Responses were coded using standard qualitative methods and common themes identified using NVivo.

Results: Participants ($N=33$) were mostly middle-aged adults ($M_{age} = 51.21$ years, $SD = 11.20$), and predominantly African American ($n=13$, 68.4%), male ($n=13$, 68.4%), and held a Bachelor's degree or higher ($n=13$, 68.4%). The two major themes that emerged were the support for cycling from family and friends ($n=10$) that encouraged further participation and the way the relationship between the cyclist and family and friends changed in a positive manner as a result of cycling participation ($n=7$). Other themes included family and friends being indifferent to cycling ($n=5$), being impressed by cycling-related accomplishments ($n=4$), or social relationships being a hindrance to cycling participation ($n=2$). Some differences in themes by gender were noted, with females emphasizing the importance of supportive relationships as a motivator.

Discussion: Findings of this study provide an insight into the role and importance of the social environment for ethnic minority cycling participation. For the most part family and friends were supportive of participants cycling, however, some results indicated that family and friends were also indifferent or hindered some participants' cycling. Interventions that develop social support for cycling could lead to more ethnic minorities participating in cycling. Future research is warranted to examine the complex role of social support for cycling for ethnic minorities to improve physical activity participation.

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D260

10:00 AM-11:00 AM

TOWARDS CULTURALLY RELEVANT PHYSICAL ACTIVITY INTERVENTION: A PILOT STUDY EXAMINING PA IN YOUNG BLACK WOMEN

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Background: Despite the multidimensional benefits of regular physical activity (PA), Black women participate in leisure-time PA at much lower rates than their Caucasian counterparts. This is a significant issue given that several chronic diseases have an inverse relationship with regular PA including: cardiovascular disease, hypertension, type 2 diabetes, obesity, breast cancer, anxiety, and depression. Many Black women are not meeting weekly PA benchmarks placing them at a significantly increased risk for obesity. Furthermore, the PA habits of young Black women and interventions to address these habits are understudied, which could have implications for chronic health concerns related to PA at older ages.

Aims: The current pilot study attempted to address the following questions: 1) Is there a difference in reported PA amounts pre- and post- study? 2) Are weekly afro-centric themes associated with weekly PA amounts?

Methods: A community sample of 36 African-American women between the ages of 18 and 39 were eligible to participate in a six-week, pilot physical activity intervention. The women were randomly placed in an information-only group or intervention group. Thirty women started the study during week one (Information-only participants $N=13$; Intervention $N=17$). Twenty-one women attended at least four of six weekly sessions (Information-only participants $N=10$; Intervention $N=11$) and analysis is based on this portion of the sample. Self-report physical activity was collected for each group. The intro group received non-culturally tailored handouts that included workout tips, stress management ideas, and basic nutrition. The intervention group received the same weekly information, but it was tailored to Black women with the use of representative pictures and used themes that are central to African-centered wellness. These themes included cultural worldview, self-awareness, authenticity, Black women's hair care, and African-centered principles of wellness in the context of PA.

Results: There was not a significant difference in weekly pre- and post-study physical activity duration in either group, nor was there a significant difference when comparing groups. For the class group, Afrocentric weekly themes encouraging PA were not significantly associated with weekly PA; although participants reported value of the themes in other areas of their lives. The results suggest more exploration of cultural themes is needed with larger sample sizes.

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D261

10:00 AM-11:00 AM

USING THE IPAQ LONG-FORM TO EXAMINE SELF-REPORTED PHYSICAL ACTIVITY LEVELS IN WOMEN WITH DIFFERENT EMPLOYMENT STATUSES

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Background Regular physical activity is associated with improved health. Despite clear benefits, only 21% of US adults meet current physical activity guidelines. Women are less active than men, with variation over the lifespan. Further, women's participation in the US labor force has increased since WWII, which may affect the perceived time for physical activity – a key barrier. Continuing labor force changes (e.g., technological advances, overtime) may have adverse health effects (e.g., decreased physical activity, sedentary time during working hours). This study examined the relationship of self-reported physical activity levels among women by employment status.

Methods Participants were 569 women (age 44.9 ± 14.6 and married $n=301$, 52.9%). Participants were from 21 census block groups, stratified by household income and percent ethnic minority across a metropolitan city in the Midwest. Participants completed a 60-minute household survey including demographics and the International Physical Activity Questionnaire (IPAQ; long form). Activities were reported in hours/day. Values were transformed into METs to estimate energy expenditure and categorized into three activity levels (*high*, *moderate*, and *low* using the IPAQ scoring guide). Employment was categorized as *employed* (employed, self-employed, $n=342$, 60.1%), *unemployed* (out of work, $n=25$, 4.4%), *not employed for wages* (homemaker, student, $n=104$, 18.3%), and *other* (retired, other, refused, $n=98$, 17.2%). Chi-square analysis with SPSS 25 was conducted to examine differences in self-reported physical activity by employment status.

Results The majority of women who were *employed* reported mostly *high* ($n=160$, 46.8%) and *moderate* ($n=109$, 31.9%) levels of physical activity (few reported *low* levels; $n=73$, 21.3%). In contrast, the majority of women in all three other employment categories reported *low* levels of physical activity (*unemployed* $n=18$, 72.0%; *not employed for wages* $n=54$, 51.9%; *other* $n=69$, 70.4%). These differences were statistically significant, $\chi^2=111.8$, $p<.001$.

Conclusions Women who are employed are significantly more likely to report moderate to high levels of physical activity, despite potentially having less available time to do so. This may be associated with reporting activities related to working as physical activity participation. Future research should prospectively study women of different employment groups to determine sources of physical activity and inform behavioral physical activity interventions.

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D262

10:00 AM-11:00 AM

ASSOCIATIONS BETWEEN COLLEGE STUDENTS' AND THEIR PEERS' PHYSICAL ACTIVITY USING PEER SOCIAL NETWORK MEASURES

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Introduction. Many college students do not meet physical activity recommendations and their level of physical activity tends to decline throughout college. Despite knowledge of dramatic changes in social environments during college, little research has examined how this may relate to physical activity in college. The purpose of this study was to examine associations between college students' physical activity levels using data from a large network of predominantly freshman.

Method. Data were derived from the eX-FLU social network study, which studied common respiratory infectious disease transmission among primarily freshman students living on-campus at a large public university during the 2012–13 academic year. 590 enrolled students who were recruited via chain-referral filled out online demographic and health surveys at baseline and reported their social contacts over 10 weeks. For participants who reported at least one contact during the study, we computed aggregate network demographic and behavior measures. An unweighted and weighted average of contact physical activity were calculated. In the weighted average, weights were based on the number of times participants reported interacting with a given contact over the 10-week period. We used generalized linear models to examine associations between participant's physical activity and average contact physical activity, controlling for relevant demographic, health behavior, and network-level variables as well as clustering within campus residence house.

Results. Under half (44%) of participants reported being active on 4+ days/week. Participant's physical activity and average contact physical activity were significantly associated ($\beta=0.411$, $p<0.001$) and this association remained after adjustment ($\beta=0.332$, $p<0.001$). In analyses that used the weighted average contact physical activity, associations were slightly larger in magnitude in both the unadjusted ($\beta=0.439$, $p<0.001$) and adjusted ($\beta=0.347$, $p<0.001$).

Discussion. This study provides evidence of an association between physical activity levels in a network of college students. Physical activity promoting interventions in college settings could consider strategies that capitalize on social environments, e.g., by engaging small groups of peers in active social activities instead of targeting individuals. Future research should collect longitudinal network and physical activity data so analyses can explore dynamic physical activity relationships within social networks.

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D263

10:00 AM-11:00 AM

EVEN A LITTLE EXERCISE INCREASES MOTIVATION TO BE MORE PHYSICALLY ACTIVE: SELF-DETERMINATION THEORY AND EXERCISE DOSAGE

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Background: Self-determination theory (SDT) states intrinsic motivations drive greater participation in exercise than external or amotivations. Similarly, exercise and exercise self-efficacy increase in reciprocal fashion. It is unknown whether differing amounts of, or exposure to, exercise influence changes in motivations over time.

Objectives: To determine whether exercise self-efficacy and motivations are increased by engaging in a greater dose of exercise.

Methods: Sedentary adults (N = 104; BMI 19.3–34.9) completed 6 weeks of treatment. Participants were randomly assigned to 150 kcal/session, 300 kcal/session, or a no-exercise control group. Exercise groups engaged in aerobic exercise of self-chosen mode (treadmill, elliptical, stair stepper), intensity and pattern 3 days/week, with a 4 week follow-up. Exercise adherence and energy expenditure was self-monitored (Sensewear Mini) and reviewed weekly by staff. Motivations, competence, autonomy, relatedness, and self-efficacy were tested at baseline, 6 and 10 weeks.

Results: There were few group differences in motivation change. Amotivation decreased ($p < 0.01$) from baseline to 6 weeks with no difference in treatment groups. Identified, integrated, intrinsic regulation, and autonomy increased ($p < 0.05$) from baseline to 6 and 10 weeks. ‘Sticking to it’ decreased ($p < 0.05$) from baseline to 6 and 10 weeks. ‘Making time’ showed both treatment ($p < 0.05$) and time effects ($p < 0.05$), but no interaction. Specifically, ‘making time’ decreased from baseline to 6 and 10 weeks ($p < 0.05$) and the 150 kcal group reported greater ‘making time’ than the control group. Self-efficacy showed significant treatment ($p < 0.05$), time ($p < 0.001$), and interaction ($p < 0.05$) effects. All groups reported decreases ($p < 0.05$) from baseline to 6 and 10 weeks in self-efficacy; however the 300 kcal group did not decrease as much as the control group ($p < 0.05$).

Conclusion: Motivations are equally impacted regardless of exercise dosage, suggesting that even dosages that are lower than activity guideline recommendations can improve motivations. Novice exercisers showed decreases in exercise-self-efficacy. However greater exercise doses may attenuate this decrease.

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D264

10:00 AM-11:00 AM

EXERCISE PREFERENCE AND TOLERANCE AS MEDIATORS BETWEEN EXERCISE MOTIVATIONS AND BEHAVIOR

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Background: Tolerance for exercise intensity facilitates usual physical activity. Novice exercisers may need to develop such tolerance for exercise to become a habit. Self-determination theory states internal motivations drive exercise participation, while external or amotivations are less predictive. Increases in exercise self-efficacy also increase exercise participation. Developing tolerance for exercise intensity via exposures to intense exercise may increase the relative reinforcing value of exercise (RRV) and the self-efficacy for exercise. The relationships between increases in exercise motivations or self-efficacy and greater physical activity may be mediated by an increased ability to tolerate exercise discomfort. Conversely, changes in tolerance may be mediated by changes in exercise reinforcement and self-efficacy.

Objectives: To determine whether changes in the preference for or tolerance of exercise intensity mediates or is mediated by changes in exercise motivations and behavior.

Methods: Sedentary adults (n = 93, BMI 19.0–34.9 kg/m²) participated in a 6 week aerobic exercise program (3 days/week, 150 or 300 kcal/day at self-chosen intensity or no exercise control), followed by 4 weeks of no prescribed exercise. Outcomes included changes in RRV exercise and tolerance of exercise intensity and MET intensity of training bouts (AveMETs).

Results: At 6 weeks, AveMETs correlated ($p < 0.05$) with changes in amotivation ($r = -0.38$), integrated regulation ($r = 0.23$), identified regulation ($r = 0.24$), and tolerance ($r = 0.23$), and with amotivation at 10 weeks ($r = -0.23$); RRV change correlated with changes in integrated regulation ($r = 0.22$) and tolerance ($r = 0.31$) at 6 weeks and negatively with external regulation ($r = -0.22$) at 10 weeks. When amotivation and tolerance predicted AveMETs, only amotivation was significant ($\beta = -0.32$, $p < 0.05$), suggesting amotivation mediates between tolerance and AveMETs. When external regulation and tolerance predicted RRV, only tolerance ($\beta = 0.29$, $p < 0.05$), remained significant. When integrated regulation and tolerance predicted RRV, only tolerance ($\beta = 0.26$, $p < 0.05$) remained significant, suggesting mediation between RRV and these factors.

Conclusion: Changes in exercise were predicted by decreases in amotivation, not increases in intrinsic motivation. Tolerance mediates between external and integrated regulations and RRV, while amotivation mediate between tolerance and AveMETs.

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D265

10:00 AM-11:00 AM

FAMILY CHILD CARE PHYSICAL ACTIVITY ECOLOGY: A QUALITATIVE GIS STUDY

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Background and Purpose: Most preschoolers fail to meet recommended guidelines for physical activity, and those attending family child care settings spend 9 minutes or less per hour of care in physical activity compared to the recommended 15 minutes per hour of care. Family child care providers (FCCPs) and settings play a fundamental role in shaping preschool children's development, including their physical activity behaviors. However, there is a dearth of research focused on the promotion of children's physical activity within the family child care context.

Objectives: This mixed-method study examines the spatial and social processes by which FCCPs shape opportunities for preschoolers' physical activity engagement in their community context.

Methods: Data from this study came from a sample of family child care providers from a Midwestern U.S. state, gathered between December 2013 to April 2017 as part of the Family Child Care Health Study. Approximately 342 family child care homes with a sub-set of 21 FCCPs were recruited from the larger pool that completed 42 qualitative, semi-structured interviews (two per FCCP). Descriptive GIS visualization methods were used to shed light on environmental features linked to each family child care home. Descriptive statistics were performed to summarize demographic characteristics of FCCPs in the qualitative subsample. Sociospatial grounded theory and analytical induction approaches facilitated analyses of narrative data from these FCCPs, and subsequent development of theoretical frameworks shed light on the processes by which they promote physical activity in the family child care context.

Findings: Overall, a theoretical framework emerged from the data that explains sociospatial processes shaping preschoolers' physical activity opportunities within the Family Child Care Physical Activity ecology. Key contextual factors (i.e., state- and site-level policies, access to indoor and outdoor spaces, FCCPs program capabilities) shape these opportunities through the core category of flexible physical activity programming. This programming ensures developmentally diverse children in mixed-age groups are able engage in what is known in the literature as "children's play." While FCCPs were asked about physical activity more generally, their conceptualization within this context revolves around the promotion of play for various purposes, including play for: 1) enjoyment and self-expression; 2) for expending children's exuberant excess of energy; 3) free, aimless, and diverting activity without purpose; 4) motor skill development. This framework may now serve as a secondary tool for examining opportunities for preschoolers' physical activity in this understudied context and with this underserved population.

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D266

10:00 AM-11:00 AM

IDENTIFYING AND DESCRIBING SEGMENTS OF OFFICE WORKERS BY ACTIVITY PATTERNS

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University of North Carolina at Chapel Hill, Chapel Hill, NC

Background: Many office workers struggle to engage in recommended levels of physical activity. Identifying segments of office workers by their existing patterns of activity behaviors may facilitate development of workplace health programs.

Purpose: The purpose of this study is to identify segments of office workers by the types of activity behaviors in which they typically engage. Associations of identified segments with demographic characteristics and objectively-measured weekly minutes of light and moderate-vigorous physical activity are examined.

Methods: Data are from the 12-month baseline phase (March 2015 - March 2016) of the Effects of Physical Activity Calorie Expenditure (PACE) Food Labeling study conducted in three worksites of a health insurer in North Carolina. Participants were invited to complete a demographics questionnaire, self-reported physical activity questionnaire (CHAMPS), and wear an accelerometer (Actigraph) for seven consecutive days. Latent class analysis was used to identify segments of office workers (n=239) by self-reported activities of daily living and exercise behaviors. The Vermont 3-step approach was used to examine the association of demographic characteristics with segment membership, and estimate segment-specific weekly minutes of objective physical activity.

Results: A majority of the analytic sample was female (n = 196; 82.0%), with a Bachelor's degree (n = 154; 64.4%), and married or in a domestic partnership (n = 129; 54.0%). A two-segment solution demonstrated best fit; segments were labeled "exercise, heavy domestic" and "non-exercise, light domestic." Being female was associated with lower odds of membership in the "exercise, heavy domestic" segment (OR = 0.18; 95% CI = 0.06, 0.52), while those with at least a Bachelor's degree had higher odds of membership (OR = 2.12; 95% CI = 1.02, 4.40). Age, children in the household, occupation, race/ethnicity, and marital status were not significantly related to segment membership. Mean weekly minutes of moderate-vigorous physical activity were significantly greater (p < 0.001) for the "exercise, heavy domestic" segment (mean = 209.5 minutes; SE = 13.5) than the "non-exercise, light domestic" segment (mean = 77.5 minutes; SE = 4.0).

Conclusions: We found two segments of office workers that correspond to sufficiently active and insufficiently active behavioral patterns. Findings suggest that female and lower educated office workers might have particularly greater need for physical activity behavior change. An understanding of activity patterns among office workers may help workplace physical activity promotion efforts appeal to more workers.

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D267

10:00 AM-11:00 AM

INTERRELATIONSHIPS BETWEEN PHYSICAL ACTIVITY, BINGE EATING, AND EMOTIONAL EATING WITHIN AN OVERWEIGHT AND OBESE POPULATION

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Although engaging in moderate levels of exercise is an adaptive health behavior, excessive exercise is associated with disordered eating. Likewise, physical inactivity is linked with adverse health outcomes. We hypothesized that binge eating (BE) and emotional eating (EE) may adversely moderate the relationship between exercise and weight. We conducted two studies to explore these hypotheses. College students ($N=1485$; Mean Age=21.09, 66% Female; 67% White, Mean BMI=25.70) completed an online battery of assessments measuring excessive exercise for weight/shape reasons (Excessive Exercise), exercise barriers, BE, and EE. In Study 2, Amazon Mechanical Turk participants (MTurk; $N=585$; Mean Age=39.66, 58% Female; 77% White, Mean BMI=27.46) completed these same measures. As expected, BMI was associated with BE ($p=.001$). Notably, overweight individuals reported more Excessive Exercise than normal weight individuals ($p=.003$). We conducted subsequent analyses, and found at step 1 of a hierarchical regression analysis, exercise barriers and Excessive Exercise contributed significantly to BMI, $F(2,746)=7.86$, $p<.001$, $R^2=.021$). Introducing BE in step 2 explained an additional 4.3% of variance in BMI, $F(3,745)=17.05$, $p<.001$, $R^2=.064$. Importantly, the introduction of BE to the regression model reduced exercise barriers and Excessive Exercise to nonsignificant in predicting BMI ($p>.05$). These findings suggest that BE may be a more important treatment target than exercise barriers or Excessive Exercise for some individuals. Reasoning that EE was connected to BE and obesity, we conducted moderation analyses using the bootstrapping approach (Preacher & Hayes, 2004). EE and BMI were associated with BE ($F(3,918)=73.23$, $p<.001$, $R^2=.193$), with main effects revealing that individuals with higher BMI and who endorsed more EE, also endorsed more BE. Results were consistent across both studies. Because EE is a known precursor to BE, and our findings suggest that individuals with obesity are susceptible to reporting more exercise barriers, less Excessive Exercise, and BE, interventions targeting emotion regulation are recommended for this population. Future research should examine potential differences between obese treatment-seeking individuals and their counterparts.

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MERITORIOUS AWARD WINNER

D268

10:00 AM-11:00 AM

IS SEDENTARY BEHAVIOR AN IMPORTANT INTERVENTION TARGET FOR CAREGIVERS OF INDIVIDUALS WITH ALZHEIMER'S?

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PURPOSE: Caregivers of individuals with Alzheimer's Disease (AD) experience challenges to maintaining healthy behaviors. To date, no health promotion interventions have focused on decreasing sedentary behavior in this population, despite the known detrimental effects of sedentary behavior on health. The current study examines the sedentary behavior patterns of the caregivers of individuals with AD.

METHODS: Adults with AD who resided in their homes were identified in a mandatory statewide Alzheimer's Disease Registry as a part of a population-based survey. Caregivers were surveyed about their personal health behaviors, including body weight and self-reported sedentary behavior. The validated sedentary behavior questionnaire included estimates of time spent in various sedentary activities (e.g., traveling, watching TV, sitting at computer or tablet, etc.). A subset of the caregivers also wore a BodyMedia SenseWear armband for 7 days to provide an objective measure of sedentary behavior and physical activity. Activity level was classified according to the following MET values: 1.0–1.5 METs was classified as sedentary, 1.6–2.9 METs as light physical activity (PA), and > 3.0 METs as moderate-to-vigorous PA (MVPA).

RESULTS: Caregivers ($N=47$) were mostly obese (M BMI = 32.28 ± 7.7) and self-reported an average daily sedentary time of 7.6 ± 1.6 hours/day, with TV watching (2.9 ± 0.3 hours/day) emerging as the most common sedentary activity which they identified. Objective measures of sedentary behavior collected on the subset of participants ($N=14$) indicate that they wore the armband an average of 6.9 ± 0.4 days with an average total wear time of 21.9 ± 2.3 hours/day and waking wear time of 16.4 ± 2.0 hours/day. Caretakers spent an average of $77.8 \pm 11.3\%$ of the day or 12.8 ± 2.8 hours sedentary. They engaged in light PA an average of $18.3 \pm 7.8\%$ of the day or 2.9 ± 1.7 hours and were engaged in MVPA on average only $3.9 \pm 4.3\%$ of the day or 0.6 ± 0.6 hours.

CONCLUSION: Caregivers spend a significant amount of time engaged in sedentary behavior. Objective measures indicate that the actual time spent sedentary was much greater than the amount of time caregivers perceived themselves to be sedentary. However, caregivers recognized that they are sedentary for a large proportion of their day. Given the negative impact of sedentary time on health outcomes, caregivers would benefit from interventions to reduce sedentary behavior.

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D269

10:00 AM-11:00 AM

MEASURING GROUP COHESION FOLLOWING AN EXERCISE INTERVENTION IN BREAST CANCER SURVIVORS

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Background: Group-dynamics based (GDB) interventions target perceptions of group cohesion. Group cohesion is positively associated with physical activity adherence in several populations, but no previous interventions for breast cancer survivors have utilized GDB exercise or measured group cohesion.

Purpose: To report on the reliability of the Physical Activity Group Environment Questionnaire (PAGE-Q) and levels of group cohesion following an 8-week exercise intervention in breast cancer survivors (BCS).

Method: BCS who completed chemotherapy and/or radiation treatment within the previous year ($N=12$, M Age= 51.7 ± 9.1) were enrolled in three cohorts (Group 1 $n=5$, Group 2 $n=4$, Group 3 $n=3$). The intervention consisted of exercise sessions 2x/week for 1-hour, and 4, 1-hour PA behavior change education/discussion sessions. Group cohesion was measured at week 1 and week 8 using the four subscales of the PAGE-Q: attraction the group-task (ATG-T), and -social (ATG-S), group integration- task (GI-T), and -social (GI-S). Example items include, "If this program ended, I would miss my contact with others", and "We encourage each other to get the most of the program". Responses use a 9-point Likert scale, from strongly disagree to strongly agree. Subscale items were summed and averaged. Higher scores indicate a greater perception of cohesion. Reliability analyses were conducted for each subscale using Chronbach's α . Analysis of variance (ANOVA) compared subscale scores between groups.

Results: Week 8 PAGE-Q subscales scores, and change from week 1 were: ATG-S $M=7.3 \pm 1.1$, $\Delta=.19$; ATG-T $M=8.3 \pm .71$, $\Delta=.26$; GI-T $M=8.0 \pm .89$, $\Delta=1.5$; GI-S $M=6.4 \pm 1.4$, $\Delta=1.0$. Reliability of the PAGE-Q was high for ATG-S ($\alpha=.855$) and ATG-T ($\alpha=.902$), but relatively low for GI-T ($\alpha=.513$), and GI-S ($\alpha=.533$). Chronbach's α if deleted was $\alpha=.733$ for "Members of our group enjoy helping if work needs to be done to prepare for activity sessions" in GI-T, and $\alpha=.616$ for "We spend time socializing with each other before or after our activity sessions" in GI-S. GI-S was significantly different between groups [$F(2,11)=7.7$, $p=.011$], with lower scores in group 3 ($M=4.5 \pm .9$) compared to group 1 ($M=7.1 \pm .91$) and group 2 ($M=7.0 \pm 1.1$).

Conclusion: A high level of group cohesion was observed, providing a useful benchmark for future researchers. The ATG-S and ATG-T subscales were reliable in a sample of BCS. Future studies in BCS should examine the impact of intervention strategies on targeted group cohesion outcomes.

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D270

10:00 AM-11:00 AM

MOTIVATION FOR EXERGAME PLAY INVENTORY: CONSTRUCT VALIDITY AND RELATIONSHIP TO GAME PLAY

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Introduction: Identifying innovative physical activity tools that motivate adolescents to engage in sustained MVPA remains a public health priority. Exergames are video games that involve physical activity and provide an opportunity to transform sedentary screen-time into active screen-time. In this study, we evaluated the construct validity of a tool to measure motivation to play exergames and its relationship with game play.

Methods: Data were from a trial of sixty-one adolescents (11 to 15 years of age, 38% female and 38% of Hispanic origin) assigned to one of four exergames to play in their home for 4 weeks. Parents provided baseline demographic information. Adolescents completed the Motivation for Exergame Play Inventory (MEPI) at the end of week 1 and completed game logs to record exergame play over the four weeks. Factor analysis with varimax rotation was used to determine the number of distinct composite factors within the MEPI. Cronbach's α assessed internal consistency of each resulting factor. Separate regression models were used to examine the association of each factor with total game play over 4 weeks.

Results: Twenty-two of 28 items were retained in the MEPI to measure five distinct constructs of motivation: sensory immersion/flow, user control, goals of the game, performance feedback, and challenge/difficulty. Cronbach's α ranged from .50 to .87. Sensory immersion/flow ($\beta = .39$, $p = .005$) and user control ($\beta = .27$, $p = .043$) were significantly associated with total game play in adjusted regression models.

Conclusion: Evidence of construct validity for the MEPI was demonstrated. Sensory immersion and flow was the strongest factor related to higher amounts of total game play. This finding supports the hypothesis that exergame play allows a player to experience flow and that flow is an important predictor for accumulated minutes of exergaming. Control was the second strongest factor contributing to total game play and may have been influenced by the game controller peripherals, which mimicked authentic sports such as a tennis racquet, bowling ball, and boxing gloves. The MEPI is a useful tool to assess players' motivation for exergaming, an important contributor to sustained physically active game play. The MEPI survey should be validated in other populations and with other active videogame platforms to further test its validity.

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D271

10:00 AM-11:00 AM

MOTIVATIONAL INTERVIEWING AND PHYSICAL ACTIVITY CHANGE IN PARKINSON'S DISEASE

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Background: Parkinson's disease (PD) is the second most common neurodegenerative disorder affecting up to 1 million people in the US and has no known cure. Exercise plays a critical role in managing chronic illnesses, such as PD, and in promoting healthy aging. This study phase sought to identify common physical activities that people with PD engage in and ways to use a web-based application (app) for motivation; in order to create a targeted intervention, with input from persons with PD, for the subsequent randomized clinical trial...

Method: Participants in two focus groups of people with PD were asked about their physical activity and preferences for an educational intervention about PD. The focus groups discussed a prototype of an app to monitor physical activity on a smartphone, tablet or computer, as part of the physical activity intervention. Focus groups were recorded and transcribed by a court reporter. Usability testing of the app was conducted to further refine preferences and barriers for use of the app intervention. Eight participants from the focus groups participated in a 1-week testing period. Participants provided feedback on the app during a semi-structured telephone interview after the testing period.

Results: Focus group participants included 8 men and 6 women. Usability testing participants included 5 men and 3 women. The majority of all participants were between 65–74 years old. Focus group transcripts and telephone interviews were reviewed and coded by two team members. Focus groups informed us of the exercise categories that needed to be in the app and how participants might use the app for goal setting and activity monitoring. Both individual exercise, such as walking, and group exercises, such as Tai Chi, Pilates, and boxing were identified by 64% of the participants. Educational materials requested included fatigue management, new research findings, and available community resources. Usability testing participant suggestions included more positive reinforcements on the app, decreased app screen scrolling, and an easier to follow user manual.

Conclusions: People with PD are involved in a variety of physical activities that include, stretching, strengthening, and aerobic activities. Stakeholder input in the early stages of this project helped to shape the app for tracking physical activity and led us to create a user-friendly website for the educational control intervention.

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D272

10:00 AM-11:00 AM

NOT FOR EVERYONE: PERCEPTIONS OF POKÉMON GO AND PHYSICAL ACTIVITY IN APP USERS AND NON-USERS

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Pokémon Go is an augmented-reality game that moves players around the community collecting monsters, acquiring items, and battling opposing teams. Social critics and health researchers have identified Pokémon Go as a high-impact health promotion tool, with the ability to increase physical activity and prompt community engagement. However, do we really understand the motivational factors that draw people toward Pokémon Go? Equally important: do we understand the barriers preventing Pokémon Go use? Answers may provide researchers with insights into the individual-level factors associated with technological intervention uptake. Our purpose was to investigate how Pokémon Go users (N=448) and non-users (N=166) differ in their perceptions of Pokémon Go and physical activity. Participants completed an online questionnaire that examined the social cognitive constructs of barriers, outcome expectancies (motivation), and self-efficacy. Non-users primarily identified not having enough time as a barrier to game uptake. Wilk's statistic indicated significant differences between users and non-users in Pokémon Go outcome expectancies, $p < 0.001$, and physical activity outcome expectancies, $p < 0.001$. Whereas users had more-favourable views of Pokémon Go, non-users had more-favourable views of physical activity. Non-users reported significantly higher self-efficacy for walking 2km, 5km, and 10km distances, $p < 0.001$; and perceived walking as more enjoyable, $p < 0.001$. Overall, findings suggest barriers to Pokémon Go use may be rooted in individuals' perceptions of the app rather than perceptions of physical activity. Indeed, this preliminary data suggests that Pokémon Go may be particularly effective for encouraging physical activity in those with relatively low views of activity.

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D273

10:00 AM-11:00 AM

PARENTAL COMMUNICATION AND PARENTAL STRESS AS PREDICTORS OF PHYSICAL ACTIVITY IN OVERWEIGHT AFRICAN AMERICAN ADOLESCENTS

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Overweight adolescents struggle to meet recommended physical activity (PA) levels as compared to healthy weight adolescents. Family Systems Theory affirms that positive parenting skills, such as open communication between adolescent and parent may contribute to behavior change and positive adolescent health outcomes such as PA. Perceived stress of the parent could have an effect on communication between parent and adolescent regarding health outcomes, but little research has been conducted analyzing this relationship. The current study aimed to examine the interaction between parental communication frequency and parental stress as predictors of adolescent moderate-to-vigorous PA (MVPA) and adolescent light PA (LPA). Participants were African American adolescents ($N = 60$; $M_{\text{age}} = 13.05$ years; 73% female; $M_{\text{BMI}} = 2.05$) and their caregivers ($M_{\text{age}} = 43.92$ years; 92% female) enrolled in the Families Improving Together (FIT) for Weight Loss trial, which tests the efficacy of a motivational plus positive parenting intervention on weight loss in African American adolescents and their parents. Parental communication frequency and parental stress were measured using validated self-report surveys. Minutes of MVPA and LPA were measured using 7-day Actical accelerometry estimates. Regression analyses indicated that the model predicting adolescent MVPA was significant beyond covariates (child BMI, child age, child sex, family income) ($F(6, 53) = 2.37, p < 0.05; R^2 = 0.21$). Parent-reported communication frequency about health behaviors was a significant positive predictor of adolescent MVPA ($B = 4.73, SE = 2.32, p < 0.05$) such that greater communication frequency was associated with more minutes of daily MVPA in adolescents. Parent-reported stress was not a significant predictor of MVPA ($B = -0.92, SE = 2.52$). Additionally, regression analyses indicated that the model predicting adolescent LPA was significant ($F(6, 53) = 3.48, p < 0.05; R^2 = 0.28$). Child age was a significant predictor of LPA ($B = -12.00, SE = 3.50, p < 0.05$) such that older youth engaged in lower levels of LPA, however, no other factors were significant. Results indicate frequent communication between parents and adolescents about health behaviors is predictive of MVPA but not LPA. Interestingly, parent communication did not interact with stress in predicting PA outcomes. Further research should replicate these findings showing the positive relationship between positive parental communication and PA in underserved overweight African American adolescents.

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D274

10:00 AM-11:00 AM

PHYSICAL ACTIVITY CONSISTENT WITH ONE'S VALUES IS ASSOCIATED WITH HIGHER LEVELS OF PHYSICAL ACTIVITY IN A COLLEGE STUDENT SAMPLE

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Introduction: Engaging in physical activity (PA) is associated with numerous physiological and psychological benefits. However, as few as 21% of Americans obtain adequate PA. Many newer PA promotion interventions, based on Acceptance and Commitment Therapy (ACT) or Behavioral Activation (BA), emphasize value-driven behavior, and have found promising results. Therefore, leveraging an individual's existing values and incorporating PA into their values may be an impactful method for increasing PA. However, there is a dearth of evidence for this assertion. The purpose of the current study was to evaluate whether congruence between values and PA behavior was associated with greater PA.

Methods: 1,738 undergraduates completed an online survey. Participants completed the International Physical Activity Questionnaire (IPAQ) short form and the PHQ-9. To assess for congruence between values and PA behavior, the Valued Living Questionnaire (VLQ) was modified for PA. Participants were asked to rate how important 12 values were to them, then subsequently rated how often they participated in 1–3 PA behaviors for each value area. For example, participants rated how much they valued family on a 1–7 scale, then rated how often they exercise with family. Congruence scores were calculated by dividing value importance by average rating of value-consistent PA; scores closer to 1 indicated greater congruence.

Results: Associations between values-PA congruence and weekly PA (IPAQ), converted to METs, were examined using linear regressions, controlling for age, gender, and race. Greater congruence between values and PA behaviors was significantly associated with: greater total METs ($t = 14.10, p < .001$); more average minutes/week of walking ($t = 4.72, p < .001$), moderate-intensity PA ($t = 10.41, p < .001$), and vigorous-intensity PA ($t = 14.94, p < .001$). Results were similar when each of the 12 value areas were analyzed individually (all p 's $< .05$). Additionally, both total METs ($t = -3.97, p < .001$) and values-PA congruence ($t = -7.45, p < .001$) were significantly associated with lower self-reported depressive symptoms.

Discussion: Greater congruence between an individual's values and value-consistent PA was associated with higher levels of PA. These results suggest that values-based interventions may be particularly effective for increasing PA. Future research using more objective measures of PA is warranted to better understand the association between PA and values and determine how this can be used to promote PA.

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D275

10:00 AM-11:00 AM

PHYSICAL HEALTH AND BINGE WATCHING

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Across numerous domains, binge behavior is carries a negative or unhealthy connotation as in “binge eating.” Previous research has shown that binge watching 3 or more times each week is associated with increased levels of anxiety and depression. The current study tested whether binge watching (as defined by participants) is associated with an avoidant coping style and whether it is associated with poor physical health. Participants (N = 177) were recruited online in the spring of 2017 and completed self-report measures of binge watching, anxiety, depression, physical health, and avoidant coping. As predicted, binge watching more than 3 days each week was associated with poorer physical health ($F(1,177)=7.31$; $p = .008$; $\eta^2 = .05$). Counter to predictions, it was not associated with greater avoidant coping ($F(1,177)=6.25$; $p = .058$; $\eta^2 = .02$). As in previous research, binge watching most days of the week was associated with higher levels of anxiety and depression. The results of this study suggest that binge watching at high levels is associated with poor emotional and physical health, though no causal relationships can be inferred. Future studies will need to test whether binge watching is distinct from other forms of sedentary behavior such as reading and playing video games. It also remains to be seen whether binge watching is different than simply having a lot of time in front of screens. Future work should also test whether higher levels of binge watching for those with high depression, high anxiety, and poor health could reflect a healthy coping response. For example, individuals with poor mobility or those lacking access to a safe options for physical activity may spend more time watching.

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10:00 AM-11:00 AM

PREDICTING TREATMENT ADHERENCE FROM BELIEFS ABOUT TREATMENTS' GENERAL-HEALTH VERSUS DIABETES-MANAGEMENT BENEFITS

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This study aimed to identify the influence of patients' beliefs about physical activity (PA) and medication for Type 2 Diabetes (T2D) management on adherence to these treatments in a sample of T2D patients ($N=80$ with complete data). Previous research shows that patients' beliefs regarding medication predict medication adherence (Horne et al., 2014), and patients' beliefs about the benefits of PA for T2D management predict PA engagement (Broadbent et al., 2011). Interestingly, qualitative research indicates that diabetes patients' motives for engaging in PA focus more on general health benefits than illness management (Lascar et al., 2014). The influence of framing treatment as important for general health versus illness management on adherence has not yet been studied. We expect that beliefs about the importance of PA for general health (vs. illness management) will be more strongly related to PA engagement in our sample. In contrast, given that medications are prescribed for a specific illness, we expect that patients' beliefs about medications for illness management (vs. general health) will predict medication adherence more strongly. Participants completed baseline measures of beliefs about PA and medicines, used electronic monitors of behavior for one month, and self-reported PA and medication adherence at one-month follow-up. We used factor analysis to verify expected belief variables: PA-for-diabetes-management; PA-for-general-health; medications-for-diabetes-management; medications-for-general-health. Bivariate correlations between belief variables and treatment adherence (medication adherence separately from PA) were compared to test the hypotheses. Analyses revealed that neither set of beliefs about PA predicted subsequent PA ($p>.05$ for self-reported and objective PA). Thus, our hypothesis that general (vs. illness-specific) beliefs would better predict PA was not supported. Further, neither set of beliefs about medication predicted subsequent medication adherence ($p>.05$ for self-reported and objective adherence). Thus, our hypothesis that illness-specific (vs. general) medication beliefs would better predict adherence was not supported. In conclusion, the current data found no relationships between patients' treatment-related beliefs and predicted treatment adherence. Future research should continue to investigate predictors of adherence so that health practitioners can utilize strategies that will affect the most adherence in their patients.

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D277

10:00 AM-11:00 AM

THE EFFECT OF MESSAGE FRAMING ON FITNESS CLASS PREFERENCES AND ATTENDANCE INTENTIONS: A FLABBERGASTING DISCONNECT

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Background: Despite the irrefutable benefits of exercise, less than 25% of Americans currently meet the ACSM's physical activity (PA) recommendations (Katzmarzyk et al., 2017). Inspiring change in PA behavior is dependent in part on the way in which the benefits of PA – or costs of physical inactivity – are conveyed, or *framed*. A number of studies have been conducted to determine the most effective framing strategy for PA promotion. However, these studies have focused on increasing individual PA participation (i.e., encouraging an individual to engage in exercise his/herself) rather than at the group level (e.g., attending Group Fitness [GF] classes). As GF classes aid in gym retention rates and assist in regular exercise adherence (Nielsen, 2014; IHRSA, 2014), promoting fitness at the group level may be beneficial for inspiring lasting change in PA behavior. Accordingly, the present study sought to determine the effect of different types of message framing on college students' preferences for – and intention to attend – a variety of group fitness classes.

Method: In study 1, participants (N = 143) read four versions of different fitness classes and were asked which version of the class they liked best. Each version presented class information with a different type of frame – health-related gain, health-related loss, appearance-related gain, and appearance-related loss – allowing us to compare within-participant preference for these frames. In study 2, participants (N = 513) read descriptions of 10 fitness classes – all of which contained descriptions with one of the four framings tested in study 1 or none of these framings – and were asked how likely they were to attend each of these 10 classes.

Results: In study 1, participants reported greater preference for the class descriptions that contained gain-framed appearance-related outcomes. In study 2, however, participants did not differ in their reported intention to attend fitness classes based on the manner in which the classes were framed (i.e., message framing of the class descriptions did not affect how likely participants were to indicate they would attend a fitness class.)

Conclusions: In our study, intention to attend GF classes did not follow reported preferences. Future research should consider including a more consequential measure (e.g., actual attendance) to determine if action is similarly unaffected by individuals' stated preferences for gain-framed appearance-related GF class descriptions.

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D278

10:00 AM-11:00 AM

THE NEW RUNNER'S HIGH?: EXAMINING RELATIONSHIPS BETWEEN CANNABIS USE AND EXERCISE BEHAVIOR IN COLORADO

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The increasing legal and cultural acceptance of cannabis necessitates that research on its health impact be extended. In the present study, we attempt initial steps toward understanding its impact on exercise behavior in Colorado, a state with legalized cannabis. An anonymous survey on cannabis use and health was advertised through social media and cannabis dispensaries. We explored the relationship between cannabis use and exercise, such as behavior frequencies, and use of cannabis within 1 hour before and/or 4 hours after exercise (CE).

Among the 270 respondents, mean age was 38.9 (SD=17), 144 were male, and 211 (78%) endorsed CE. While CE respondents reported more exercise per week ($p < .05$; $d = .4$), they were also younger ($p < .001$; $d = .5$), and CE was not associated with exercise frequency after controlling for age. Among those who endorsed CE: 75% agreed that cannabis increases *enjoyment* of exercise; 18% were neutral; 7% disagreed. 76% agreed that cannabis enhances *recovery* from exercise; 16% were neutral; 8% disagreed. 55% agreed that cannabis increases *motivation* to exercise; 26% were neutral; 19% disagreed. In the full sample, minutes of aerobic exercise was not correlated with days of traditional cannabis use (flower or edibles) per week. However, each day of high-potency cannabis concentrate use was associated with 6 additional minutes of aerobic exercise per week, even after controlling for age and frequency of traditional cannabis use ($p < .05$; $d = .02$). Concentrate use frequency was not highly correlated with flower ($r = .21$) or edible use frequency ($r = .25$).

These data suggest that many cannabis users in Colorado engage in CE, and that most who do so believe it increases enjoyment of, recovery from, and, to a lesser extent, motivation to engage in exercise. As these factors positively correlate with exercise behavior, CE may play a beneficial role in the health of cannabis users. The positive correlation between use of high-potency concentrates and exercise may reflect lower perceived harm of concentrates compared to smoked flower. Future research will refine and expand upon this foundational study.

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D279

10:00 AM-11:00 AM

UNDERSTANDING ACTION CONTROL OF PHYSICAL ACTIVITY IN MOTHERS WITH YOUNG CHILDREN

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Background: Mothers with young children in the home are a critical target for physical activity promotion. Current research on the correlates of physical activity during early motherhood has generally considered intention as the primary determinant of behavior, yet the intention-behavior relationship is often modest. The purpose of this paper was to apply a framework designed to evaluate the intention-behavior gap, known as multi-process action control (M-PAC), to understand physical activity among mothers with young children.

Method: A community sample of 181 mothers (mean age 34.76 years) of at least one child under five years of age in Victoria, Canada completed M-PAC measures of motivational (instrumental attitude, affective attitude, self-efficacy), regulatory (planning), and reflexive (automaticity, identity) processes as well as intention to engage in physical activity and behavior (150 min of moderate or higher intensity).

Results: Three main intention-behavior profiles emerged: a) non-intenders who were not active (34%; n=62), b) unsuccessful intenders who failed to enact their positive intentions (18%; n=32), and c) successful intenders who were active (39%; n=71). A discriminant function analysis [$\chi^2(15) = 61.86, p < 0.01$; canonical $r = 0.53$] showed that automaticity ($r = 0.42$), planning ($r = 0.33$) and self-efficacy ($r = .43$) distinguished between non-intenders and both profiles of intenders but only affective attitude ($r = 0.19$) could predict the intention-behavior gap.

Conclusions: The majority of parents with young children in this sample had positive physical activity intentions, yet over 30% fail to meet these intentions. While behavioral regulation (e.g., setting a concrete plan), habit (e.g., making routines and cues) and self-efficacy (e.g., problem solving of barriers) differentiate active compared to inactive mothers, interventions focused on the affective qualities of physical activity (e.g., enjoyable circumstances, pleasant feeling states) may help overcome difficulties with translating intentions into action.

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D280

10:00 AM-11:00 AM

COMMUNITY HEALTH AND WELLNESS ASSESSMENT USING CBPR METHODOLOGY IN A RURAL REGION

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Background: A 2016 pilot study of a frontier county assessed their health/wellness needs by economic sector. A community assessment tool, available in English and Spanish, was administered by trained community volunteers. Questions focused on availability of health/wellness resources in the county and health/wellness resources offered at the worksite, daycare/preschool, school, church, County Extension office, and in the community. Incentives were provided and 85% of households completed the survey. Follow-up focus groups were conducted in December 2016.

Objective: The purpose of this study was to use this CBPR methodology to assess community members' perceptions, knowledge, attitudes, and desires related to health/wellness resources in two additional counties in an extremely rural region of a Midwestern state.

Methods: Using the same CBPR methodology and assessment tool, households in two contiguous counties (2,707 and 1,411 households) were targeted. Trained community volunteers and university interns collected one survey per household in June-August 2017. Descriptive analyses were conducted.

Results: A total of 1,332 (49%) and 881 (62%) surveys were completed. Median age of survey respondents was 45 years with >70% female respondents. Household income of 47% of respondents was at or below the county's median income. The majority (33% and 38% respectively in each county) defined health and wellness as an "active, lifelong process of becoming aware of choices and making decisions toward a more balanced and fulfilling life," and 58% reported that "health/wellness is influenced by the environments where I live, learn, work, play and pray." About 47% reported that they partially agreed with the statement "the healthcare system is responsible for my health/wellness" followed by 33% who disagreed. Themes of identified needs appeared in all sectors across the three counties: breastfeeding support, weight management/diet counseling, support for caregivers, access to healthy foods, community gardens, biking trails, health education for all ages, parenting education, work-life balance programs, and assistance with insurance decisions for seniors.

Conclusion: This CBPR community assessment process demonstrates effectiveness in identifying concerns that should be addressed in order to enhance the quality of health/wellness resources and to engage communities to action. Follow-up studies are needed to identify feasible interventions thereby improving health and wellness for this population.

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D281

10:00 AM-11:00 AM

A CITIZEN SCIENTIST APPROACH TO PROMOTE HEALTHY AGING AMONG LESBIAN GAY BI-SEXUAL AND TRANSGENDER (LGBT) ELDERERS IN ALASKA

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Background: There is a pressing need for safe, accessible communities that support the physical and social determinants of health for a diverse and aging society. LGBT elders may face additional obstacles to healthy aging, including concerns about personal safety, social isolation, access to informed providers, and welcoming places. We piloted the use of Citizen Science methods with LGBT elders residing in Anchorage, to identify problems and solutions, and build collective efficacy.

Methods: Participants were recruited through community events and direct outreach. Data collection included participant walks/drive-abouts using the Our Voice Neighborhood Discovery Tool, a smartphone app that combines photo, voice recording, and Global Positioning Systems (GPS), to create route maps. All participants completed baseline and 6-month surveys to assess social cohesion and loneliness. Walks/drive-abouts occurred in summer of 2017.

Results: Participants (N=8) were diverse in age (median age of 62.5; range 53–71), sex (4 male, 4 female), sexual orientation (3 lesbian, 3 gay, 2 bisexual), gender identity (1 transgender man, 1 transgender woman) and zipcode. Participants completed 8 walks, took 66 photos with narratives, and participated in 2–5 group meetings to identify themes and potential solutions. *Social Participation*, and *Respect and Inclusion* were top concerns. Solutions included plans to present findings to aging councils and state employee associations, and identify partners to promote a Safe and Welcoming Anchorage. Self-reported social cohesion and loneliness scores improved at six months, with medium ($d=.42$) to large ($d=1.03$) effect sizes. Participants identifying as Transgender (either female to male or male to female) rated lack of training for healthcare providers and community fear or dislike of LGBT people as a significant to major problem.

Conclusions: This pilot project demonstrated the potential for Citizen Science methods to identify needs and feasible solutions for vulnerable elders, and to increase social cohesion and decrease loneliness in participants.

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D282

10:00 AM-11:00 AM

ASSOCIATION BETWEEN DISORDERED GRIEF CRITERIA, BLOOD PRESSURE AND SELF-REPORTED HEALTH

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Background: Spousal bereavement is associated with increased mortality and morbidity in the surviving spouse. Although most widow(er)s are resilient, approximately 10% develop a chronic debilitating course of grief. Grief severity has an adverse impact on individuals' health over and beyond bereavement. Different criteria exist to assess grief symptoms including Complicated Grief (CG), Prolonged Grief Disorder (PGD), and Persistent Complex Bereavement Disorder (PCBD). Considerable debate exists regarding the exact criteria of disordered grief, although each criteria set describes the underlying phenomenon. The present study seeks to add to the current debate by exploring the association of CG, PGD, and PCBD with health-relevant measures including blood pressure and self-reported health.

Methods: Data for the present study came from the baseline of a sample of 100 widow(er)s (mean age = 67.7, SD = 9.1) who participated in a randomized controlled trial of a grief intervention from August 2015 – August 2017. Diagnosis with CG, PGD, and PCBD were assessed through matching grief criteria and relevant questionnaire items from several well-validated grief and depression scales. Self-reported health was a one-item question on a five-point Likert scale. Regression analyses were run with each diagnostic criteria set (CG, PGD, PCBD diagnosis vs. no diagnosis) predicting resting diastolic (DBP), systolic (SBP) blood pressure and self-reported health in separate models (9 models total) accounting for relevant covariates.

Results: After accounting for covariates, a diagnosis of CG significantly predicted lower self-reported health [$b = 0.45$, $t(91) = 2.33$, $p < .05$; $F(4,91) = 6.42$, $p < .05$, $\Delta R^2 = .19$]. On the other hand, PGD or PCBD diagnoses did not predict self-rated health ($p > .05$). No main effects emerged for the regression of DBP or SBP on CG, PGD or PCBD ($p > .05$).

Conclusion: These findings suggest more similarities than differences between existing grief criteria sets in their associations with health-relevant parameters. Of note, CG criteria (vs. PGD and PCBD) diagnose the largest number of bereaved individuals with disordered grief and only CG diagnosis was significantly associated with self-reported health. For comparison, depression was also not predicted by any of the health-relevant variables. Future research would benefit from a larger sample and longitudinal study design to explore the impact of grief severity on diverse health-relevant measures linked to increased morbidity and mortality in bereaved adults.

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D283

10:00 AM-11:00 AM

COMPARING HEALTH INFORMATION ACCESS BETWEEN U.S. RURAL AND URBAN POPULATIONS

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Purpose: Relative to their counterparts in urban areas, Americans living in rural areas face unique health disparities such as lower rates of screening and preventive health behaviors. The ability to make informed decisions to engage in health promoting behaviors is influenced by access to health information. Compared to urban populations, rural populations have limited access to a variety health information sources. We conducted a fine-grained exploration of which health information sources might be less accessible to rural vs. urban residents. We also hypothesized that having low health literacy might exacerbate rural disparities in access to health information.

Methods: Six hundred participants (evenly divided between urban and rural residence) completed an online survey. We assessed whether participants were able to easily and affordably get health information from a variety of sources, their health literacy, and demographic characteristics. Data were weighted so the rural and urban subsamples would be representative of the U.S. rural and urban populations. We used unadjusted and adjusted (controlling for race/ethnicity, income, and education) logistic regressions to test associations between rurality and access to health information and if rurality interacted with health literacy to predict access to health information.

Results: There were no differences in health literacy, household size, or age between rural and urban participants; however, the former had lower income and education and were less likely to be minority than rural participants. In unadjusted models, rural participants had lower odds of access to health information from primary care providers ($OR = 0.65, p = .037$), specialist doctors ($OR = 0.58, p = .007$), dentists ($OR = 0.68, p = .049$), magazines ($OR = 0.65, p = .034$), radio ($OR = 0.67, p = .047$), blogs or celebrity webpages ($OR = 0.67, p = .049$), federal government ($OR = 0.63, p = .027$), and scientists ($OR = 0.70, p = .049$). In adjusted models only the difference in access to health information from specialist doctors remained significant ($OR = 0.63, p = .024$). Rural/urban status interacted with health literacy, predicting access to health information from newspaper ($OR = 0.17, p = .001$), magazines ($OR = 0.33, p = .042$), and scientific literature ($OR = 0.29, p = .020$). Among rural participants, having limited health literacy was associated with lower access, whereas it was not among urban participants.

Discussion: Sociodemographic differences may account for several of the disparities in information access given that when we controlled for income, education, and race/ethnicity, differences were eliminated. In addition, there may be structural barriers such as more limited media exposure, that make it harder for rural populations to access to health information, especially among rural populations with limited health literacy.

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D284

10:00 AM-11:00 AM

EFFECT OF PERCEIVED NORMS, HEAVINESS OF SMOKING, AND GENDER ON SMOKING QUIT ATTEMPTS AMONG LOW INCOME SMOKERS IN BALTIMORE, MD

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Background: Declines in smoking prevalence among disadvantaged populations lag behind national samples. Both nicotine dependence and social factors may impact smoking cessation, and recent literature suggests that smoking behaviors may spread throughout social networks. This study explores how smoking dependence, descriptive norms and injunctive norms impact likelihood of a current smoking quit attempt among men and women in a sample of hard-to-reach, low income, predominately African American respondents in Baltimore, MD.

Methods: Participants completed a survey regarding tobacco use, smoking norms, and their heaviness of smoking index (HSI; 0–6, lowest to highest dependence). Descriptive norms were conceptualized as having friends who quit smoking, and injunctive norms as having friends who disapprove of smoking. Three logistic regression models explored the effect of the following predictors on current quit attempt: 1) friends quit and HSI; 2) friends disapprove and HSI, and; 3) friends quit, friends disapprove, and HSI. All models were stratified by gender, and all models adjusted for age, income, and race.

Results: Among women (n=200), neither HSI nor norms were associated with current quit attempts in any model. Among men (n=335), friends quitting smoking and friends disapproving of smoking were both associated with reduced odds of quitting when examined separately in models 1 and 2 (Table 1). When examined collectively in model 3, men with friends who had quit smoking had twice the odds of having a current quit attempt (AOR=2.01 [1.06–3.79]), while having friends who disapproved of smoking was no longer associated with having a current quit. Higher HSI was associated with reduced odds of quitting in all three models among men (model 1: AOR=0.75 [0.63–0.90]; model 2: AOR=0.74 [0.62–0.88]; model 3: AOR=0.76 [0.63–0.90]).

Discussion: Friends' normative behaviors and attitudes regarding smoking impacted the likelihood of current quit attempts for men but not women, suggesting that it is important to examine gender differences when creating socially-oriented smoking cessation interventions. These results offer a foundation to consider the varying impact of descriptive and injunctive norms on smoking behaviors.

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D285

10:00 AM-11:00 AM

GAINING INSIGHT INTO THE NEIGHBORHOOD PERSPECTIVE THROUGH PHOTOVOICE

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The neighborhood environment can impact the health behaviors of its residents. Neighborhood characteristics such as availability of grocery stores and parks can influence shopping and physical activity habits. As part of a larger project to address healthy living in New Orleans, we wanted to explore the issues that affect residents of three New Orleans neighborhoods. A community-based participatory research method called photovoice was employed. Photovoice is a process where participants use images to share aspects of their environment and experience. In collaboration with community partners, residents of three under-resourced neighborhoods of New Orleans were recruited. Participants were asked to attend four meetings over four weeks, each lasting one hour. They were loaned digital cameras and trained in basic camera operation and appropriate ethical conduct in photography. Each week, topics were assigned by facilitators to guide the participants to identify challenges and/or supports that influence a healthy diet, physical activity, and general health. After each assignment, participants were asked to select at least two photos they took and discuss them with study facilitators. The SHOWeD questioning technique, typically used in photovoice studies, was used to assist participants in elucidating the themes in their photos.

A total of 26 community residents participated in the sessions and selected 138 photos. Common nutrition-related themes highlighted access to community gardens, lack of access to grocery stores, and food preparation of personal meals. Common physical activity-related themes included neighborhood parks, presence of sidewalks, and abandoned spaces that were either perceived as scary or wasted space that could be used as parks or gardens. Overall, the most common theme focused on displeasure with the abundance of abandoned properties in their neighborhoods. One participant stated when describing their photograph of a large trash bag discarded in the middle of a residential road with blighted properties, "...someone had no respect for the area because of these abandoned properties...if [the owners of these] blighted properties cannot find residents, then they should be turned into parks or something that makes the neighborhood healthier....." The results of this project may be used to guide future interventions in these neighborhoods. Photovoice can be used to help researchers gain insight into resident's perspectives.

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D286

10:00 AM-11:00 AM

HARNESSING TECHNOLOGY AND CITIZEN SCIENCE TO SUPPORT AGE-FRIENDLY NEIGHBORHOODS IN TAIWAN

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Taiwan's population is rapidly aging at a rate more than twice that of Europe and the US. In response to this challenge, creating an activity-friendly environment that meets the diverse needs of the aging population and fosters aging in place are essential. Yet, it is currently unclear how best to build age-friendly environments that meet seniors' needs. To capture seniors' perspectives in a contextually valid way, a community-engaged participatory process, called *Our Voice*, was tested for the first time in Taiwan. *Our Voice* involves seniors acting as "citizen scientists" through systematically gathering data, using a simple GPS-enabled mobile app (Stanford Discovery Tool- DT), on barriers to and facilitators of healthy aging in their local environments. They use these data to build consensus and collectively advocate for local environmental and policy-level changes to support healthy aging. The seniors lived in Cijin, Taiwan, where 14.3% of the population are 65 years and older, and transportation and medical resources are scarce.

15 seniors (≥60 years; 33%women; 76% men; 100% high school education only) were recruited in June 2017 to use the DT to take photos and record audio narratives on neighborhood barriers and facilitators that impact healthy aging. Upon completion of data gathering, participants attended a community meeting to analyze and discuss their photos and audio narratives, and prioritize neighborhood issues to address. A second community meeting (3 weeks later) was then conducted whereby the seniors shared their results with relevant village officials and discussed realistic solutions to improve their neighborhood for healthier aging.

A total of 78 photos and narratives were collected by participants, and the issues identified included poor state of sidewalks, lack of public places to gather, abandoned buildings, a dysfunctional sewage system, and personal safety issues. Participants concluded that improving abandoned buildings and personal safety were the priority issues to address in Cijin. During the second community meeting, participants and relevant stakeholders decided that together they would start remodeling an abandoned building and turn it into a community center where the goals of creating a public space for seniors to gather and improving personal safety could be achieved simultaneously. This work is currently ongoing.

This study demonstrated the feasibility and value of using the *Our Voice* citizen science approach to advance sustainable age-friendly neighborhoods in Taiwan. Cijin seniors were able to use the DT app to identify local barriers and, with local stakeholders, develop feasible solutions to promote healthy aging. Next steps include continued evaluation of the local changes initiated in this first-generation project, and expanded evaluation of the *Our Voice* approach in other communities in Taiwan and China.

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D287

10:00 AM-11:00 AM

HEALTH-PROMOTING BEHAVIORS IN CANCER CAREGIVERS

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Background: The stress of caregiving for a loved one with cancer might negatively impact physical and mental health. Participation in health-promoting behaviors such as physical activity, proper nutrition, and stress management can potentially lessen those effects.

Objective: To describe the health-promoting behaviors practiced by caregivers of cancer patients, and to identify those personal, interpersonal, and situational factors that influence health-promoting behaviors in cancer caregivers.

Participants: Family caregivers of patients beginning cancer treatment (\pm 14 days) at the National Institutes of Health Clinical Center.

Methods: Cross-sectional, web-based survey used descriptive statistics and regression analyses to examine which personal (e.g., age, sex, race, income, body mass index, sleep disturbance, depression, stress, caregiver burden, self-efficacy), interpersonal (e.g., mutuality, relationship to patient), and situational (e.g., sole caregiver versus part of team, inpatient versus outpatient, work status) factors predicted health-promoting behaviors. Measures: Health-Promoting Lifestyle Profile II (HPLP-II); Caregiver Reaction Assessment (CRA); Family Care Inventory Mutuality subscale; NIH Toolbox Perceived Stress and Self-Efficacy; Patient-Reported Outcomes Measurement Information System (PROMIS®) Sleep Disturbance and Depression.

Results: Caregivers (N=137) included mostly spouses (48.9%) and parents (35.0%) of patients; they were 48.5 ± 11.7 years of age, and primarily white (70.6%), female (68.6%), and educated (70.1% had a college degree). Physical activity and stress management were practiced the least frequently of all health behaviors. Most (60.7%) agreed that they exercised less since becoming a caregiver, and 45.9% agreed that their diet worsened. Final predictors of HPLP-II scores included income ($\beta = 0.182, p = 0.025$), self-efficacy ($\beta = 0.282, p = 0.002$), depression ($\beta = -0.198, p = 0.035$), and mutuality ($\beta = 0.244, p = 0.004$).

Conclusions: Caregivers who have lower incomes, are more depressed, and who score lower on mutuality and self-efficacy are less likely to participate in health-promoting activities. These individuals may be at increased risk of negative health effects associated with caregiving. Understanding which caregivers are at risk is important in order to tailor future interventions and research.

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D288

10:00 AM-11:00 AM

INCORPORATING SOCIAL AND COMMUNITY VARIABLES INTO A PREDIABETES RISK REGISTRY: CREATING RESEARCH INFRA-STRUCTURE

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Objective: The DARTNet Institute recently created a large database from real-world clinic settings to explore diabetes and cardiovascular risk factors. This database will be used for research on social and environmental determinants that influence risk and disease progression and health disparities in diabetes and cardiovascular outcomes. The purpose of this project was to establish a set of social and community variables from population databases (e.g., US Census) that could be linked with clinical data to ensure a 360-degree view of the determinants of health.

Methods: We used literature and expert review to select social and community variables to integrate into the database. The framework used was the Criteria for inclusion in the database were a) not available at the patient level in the electronic health record, b) available from existing large population databases (e.g., US Census, the American Community Survey), c) linkable to clinical data at the zip code level, d) consistent with the World Health Organization Social Determinants of Health Framework domains and subdomains, and e) have rationale for association with risk for transitioning from prediabetes to diabetes.

Results: As of 2017, the database contained clinical data for nearly 4 million patient lives from 13 healthcare organizations and 450 clinical sites. We identified nine WHO SDOH domains and subdomains relevant to diabetes and cardiovascular risk from existing population databases that could be linked with the clinical data at the zip code level: social class, education, occupation, income, living and working conditions, food and nutrition, resources, health insurance, and stressors. Within these domains, we selected 14 community-level variables from population databases: poverty level, SNAP benefits, educational attainment, food desert, food quality, food insecurity, household income, walkability, neighborhood safety, medically underserved area, health insurance access, disability rates, and unemployment rates.

Conclusion: A comprehensive set of social and community variables is available to link with clinical data for the study of diabetes and cardiovascular risk. The integrated data will be used to test hypotheses about diabetes and cardiovascular risk and disparities. Population databases can be useful for enhancing clinical data for the study of complex chronic disease prevention. Population databases lack key risk variables - such as health behaviors and social capital - and must be gathered from other sources.

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D289

10:00 AM-11:00 AM

LONELINESS MODERATES THE ASSOCIATIONS BETWEEN CHILDHOOD TRAUMA AND ADULT DISEASE IN THE HISPANIC COMMUNITY HEALTH STUDY

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Traumatic experiences in childhood are associated with negative health consequences in adulthood. Examining moderators of the relationship between adverse childhood experiences (ACEs) and adult health in Hispanics/Latinos is particularly important because, despite usual risk factors, Hispanics/Latinos have lower overall mortality rates. Prior research in the Hispanic Community Health Study sample has shown that the relationship between childhood trauma and adult disease in Hispanics/Latinos is not as strong as has been reported in other studies. This study examined potential moderators (loneliness, number of friends, years in the U.S., and nativity status) to understand for whom the relationship between childhood trauma and adult disease holds. Outcomes included mental (depression), physical (asthma, coronary heart disease, BMI), and behavioral (smoking, sedentary time) health. In this sample (N = 5313), loneliness (B=0.06 95%CI: 0.02, 0.11) and number of friends (B=-0.08, 95% CI: -0.14, -0.03) significantly moderated the relationship between childhood trauma and adult depression only (*p*'s <.05). The relationship between childhood trauma and depression was stronger at higher levels of loneliness and for individuals reporting having few friends. Given the same number of ACEs, those with higher levels of loneliness experienced more depression than counterparts with lower levels of loneliness. Nativity did not moderate any relationships but positively related to smoking status (OR = 1.82, 95%CI: 1.41, 2.36), asthma (OR = 1.96, 95%CI: 1.39, 2.76), BMI (B=1.46, 95%CI: 0.69, 2.23), depression (B=1.28, 95%CI: 0.57, 1.99), and sedentary time (B=59.49, 95%CI: 38.54, 80.45, *p*'s <.05). For non-natives, years living in the U.S. was not a moderator but was significantly associated with increased odds of coronary heart disease (OR = 1.02, 95%CI: 1.00, 1.04) and higher BMI (B=0.04, 95%CI: 0.02, 0.07, *p*'s <.05). Assessing and addressing loneliness in U.S. Hispanics/Latinos who have experienced trauma may help reduce development of depression symptoms. Further research should aim to explore if these relationships hold longitudinally.

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D290

10:00 AM-11:00 AM

PERCEIVED DISCRIMINATION AND NEIGHBORHOOD VIOLENCE PREDICT GREATER NUMBER OF HEALTH SYMPTOMS

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Exposure to crime and violence increases unhealthy behaviors and stress, which link to hypertension and weakened immunology (Ellen, Mijanovich, & Dillman, 2001). Perceived discrimination is similarly associated with physical health problems, including hypertension and breast cancer (Williams & Mohammed, & Jackson, 2009). Together, neighborhood disadvantage and perceived discrimination have adverse mental health risks (Prelow, Danoff-Burg, Swenson, & Pulgiano, 2004). However, research has yet to examine physical health symptoms. Moreover, studies on discrimination have largely focused on racial discrimination whereas this study captures a broader range of discrimination experiences. We hypothesize that neighborhood violence and perceived discrimination interact to predict more negative health symptoms.

Young adults (N = 241, *M* age = 22.1 years; *SD* = 3.7; 12.0% Asian, 15.7% African American, 27.7% Caucasian, 15.3% Multi-racial, 24.8% Hispanic/Latino) completed an 11-item questionnaire assessing community violence, such as witnessing an assault or break-in in the community. Participants also reported on experiencing judgment or unfair treatment on a 27-item perceived discrimination survey. Participants also completed a 23-item survey on past year health symptoms.

Bootstrapped moderation analyses assessed the interaction between perceived discrimination and neighborhood violence on health symptoms from the past year. As hypothesized, the interaction between perceived discrimination and neighborhood violence was significant (*b* = .68, *p* = 5.26, *p* < .01), but not low levels of discrimination (*b* = -.70, *ns*). The main effect of perceived discrimination was also significant (*b* = .17, *p* < .05).

These results suggest that experiencing multiple forms of adversity in the form of neighborhood violence and discrimination negatively impact health. Discrimination appears to heighten the impact of other adverse events on health. Neighborhood violence did not have an effect until coupled with discrimination. Studies on the multiplicative effects of different forms of adversity can more closely model the circumstances of at-risk communities. Future studies on discrimination's impact on other experiences of violence could further elucidate the relationship between cumulative adversity and health risks.

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D291

10:00 AM-11:00 AM

PERCEIVED DISCRIMINATION PREDICTS HEALTH RISK BEHAVIORS AND SUBJECTIVE HEALTH IN RURAL APPALACHIAN COLLEGE STUDENTS

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Discrimination has been linked to various negative health outcomes, including health risk behaviors such as unhealthy food choices, decreased physical activity, and alcohol/substance use (e.g., Richman et al., 2016); however, much of this research has understandably focused on racial/ethnic discrimination with less work focusing on other types of perceived discrimination, (e.g., due to weight, age, religiosity). Additionally, fewer studies have examined this relationship among individuals in rural Appalachia. This study aims to expand the previous literature through use of a broad, personally-defined perspective on discrimination (the Everyday Discrimination Scale; Williams et al., 1997) in a sample of students at a mid-sized university in rural Appalachia. Perceived discrimination was found to predict participants' higher body mass index ($R^2 = .11$, $F(5, 382) = 9.47$, $p < .001$), poorer self-rated general health ($R^2 = .13$, $F(5, 379) = 11.68$, $p < .001$), increased somatic symptom complaints ($R^2 = .18$, $F(5, 381) = 16.86$, $p < .001$), decreased fruit and vegetable consumption ($R^2 = .06$, $F(5, 380) = 4.51$, $p < .01$), decreased physical activity ($R^2 = .03$, $F(5, 362) = 2.37$, $p < .05$), and increased engagement in risky sexual behaviors ($R^2 = .07$, $F(5, 369) = 5.70$, $p < .001$), while controlling for age, gender, race, and family income. We were also interested in possible mechanisms to explain the relation between perceived discrimination and health outcomes. We investigated the role of emotion regulation (ER) difficulties (Difficulties in Emotion Regulation Scale [DERS]; Gratz & Roemer, 2004) as a possible mediator, given that research has shown emotion regulation processes to be linked to physical health outcomes (Gross, 2015). Of all outcomes, ER difficulties were only significantly correlated with somatic symptom complaints ($r = .43$, $n = 492$, $p < .001$), and thus only one mediation model was tested using Hayes Process Macro with bootstrapping (5000 samples). Difficulties with ER were found to mediate the link between perceived discrimination and somatic symptom complaints [$R^2 = .26$, $F(366) = 21.64$, $p < .001$; indirect effect of DERS total $t(366) = 8.02$, $p < .001$, LCI = .03 UCI = .08], when controlling for age, gender, race, and family income. Taken together, these findings establish a link between perceived discrimination and health outcomes in a rural Appalachian sample and identify ER difficulties as one mechanism through which discrimination may heighten risk for somatic complaints.

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D292

10:00 AM-11:00 AM

PREVALENCE AND COMPARISON OF OBESITY AND HEALTH BEHAVIOURS BETWEEN URBAN AND RURAL RESIDENTS: AN ATLANTIC PATH STUDY

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Objective: The primary purpose of this study was to describe and compare the demographic, medical, and behavioural characteristics between urban and rural residents in Atlantic Canada. A secondary purpose was to examine the influence of any differences found in the primary purpose on various measures of body composition.

Methods: A cross-sectional analysis of data from the Atlantic Partnership for Tomorrow's Health (Atlantic PATH) was conducted. Physical measures, sociodemographic characteristics and health behaviours (i.e. diet, alcohol consumption, physical activity) were collected from 31,173 participants aged 35–69 across the four Atlantic Provinces. This study includes data from 11,489 participants that had both completed measures for body composition and the health behaviours of interest.

Results: Multiple linear regression (adjusting for age, sex, and province) found that when compared to urban participants, rural residents were significantly less likely to be regular or habitual drinkers and more likely to be classified as very active. Rural residents were less likely to be classified as obese based on BMI but more likely to be classified as having abdominal obesity (Model 1). Significant differences remained after further adjustment in Model 2 for ethnicity, education, marital status, HEI, smoking, alcohol use, multimorbidity, BMI, PA, and body composition measures as applicable. No significant differences in body mass index (BMI), waist circumference, or body fat percentage were found in the initial regression model. Model 1 revealed a significant difference for fat mass index (FMI) that remained after full adjustment in Model 2. BMI and waist circumference differences remained non-significant in Model 2.

Conclusion: Overall, we found that participants living in a rural area engaged in more healthy behaviours than urban residents. Our results also showed lower levels of overall body adiposity but higher abdominal obesity among rural residents. These results are mixed and generally contrary to literature that suggests rural residents are generally less healthy than urban residents.

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D293

10:00 AM-11:00 AM

RELATIONSHIP BETWEEN CHANGES IN NEIGHBORHOOD ENVIRONMENT PERCEPTION AND BLOOD PRESSURE CHANGES: DALLAS HEART STUDY DATA

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Background: Although much is known about the relationship between neighborhoods and health outcomes, knowledge about neighborhood environment perceptions and their impact on cardiovascular markers is burgeoning. We examined the relationship between neighborhood perceptions and blood pressure (BP).

Methods: Using longitudinal data from the multi-ethnic, Dallas Heart Study, we examined the relationship between changes in neighborhood perception and BP over the 7-year study period. Neighborhood perception scores were generated using items from the Project on Human Development in Chicago Neighborhoods Community Survey. Three sub-scores were created using factor analysis (Factor 1: neighborhood violence, Factor 2: physical environment [i.e. aesthetics], and Factor 3: social cohesion). Higher scale scores are associated with more unfavorable perceptions. Systolic and Diastolic blood pressure was measured during two exams between 2000–2009. Using linear regression, we investigated the relationship between changes in neighborhood perception factors over the follow-up period and BP for participants without baseline hypertension. Models were adjusted for age, sex, race, smoking, income, education, physical activity, years in neighborhood, BMI, moving status and Heckman correction factor (to account for self-selection into improved neighborhood).

Results: The study population (N=1174) consisted of 57% non-Hispanic Blacks, 27% non-Hispanic Whites, and 13% Hispanics. In fully adjusted models, only changes in Factor 2 (physical environments) were associated with changes in systolic blood pressure ($\beta=0.24$ $p=0.03$), but not Factor 1 (neighborhood violence [$\beta=0.43$ $p=0.09$]) or Factor 3 (social cohesion [$\beta=0.28$ $p=0.11$]). However, in fully adjusted models, each perception factor was linked to changes in diastolic blood pressure, Factor 1: ($\beta=0.31$ $p=0.03$), Factor 2: ($\beta=0.21$ $p=0.0004$), and Factor 3 ($\beta=0.23$ $p=0.02$).

Conclusion: More unfavorable neighborhood perceptions were related to increases in blood pressure among a diverse population in Dallas County, Texas. Examining the psychological factors in relation to cardiovascular health may better represent the impact of adverse neighborhood conditions than only objective measures. Future research should examine both perceived and objective measures of neighborhoods and neighborhood built environment amenities in relation to cardiovascular markers to further understand these complex relationships.

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D294

10:00 AM-11:00 AM

RELATIONSHIP SATISFACTION, COMMUNICATION SELF-EFFICACY, AND CHRONIC FATIGUE SYNDROME (CFS)

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Introduction: Relationship dissatisfaction has been linked with worse health outcomes in many patient populations, though the mechanism(s) underlying this effect are unclear. Among patients with chronic fatigue syndrome (CFS) and their partners, there is a bi-directional correlation between poorer relationship satisfaction and the severity of CFS-related fatigue. Here, we hypothesize that depression mediates this relationship, such that relationship dissatisfaction negatively impacts CFS fatigue severity by way of greater depression and less patient satisfaction about communication about symptoms to partners.

Methods: Baseline data were drawn from diagnosed CFS patients (N = 150) participating in studies testing the efficacy of a remotely-delivered cognitive behavioral stress management (CBSM) intervention. Data derived from fatigue severity, depression, relationship and communication satisfaction questionnaires were used for bootstrapped indirect effect analyses using SPSS and the PROCESS macro. Age, education and BMI were entered as covariates.

Results: The majority of the sample (67.3%) had clinically significant depressive symptoms (CES-D ⁵ 16). Co-mediation analyses (using parallel multiple mediators) revealed that better relationship satisfaction relates to less fatigue severity by way of less depressive symptoms ($b= -0.0106$, $se= 0.0053$, Bootstrapped LLCI, ULCI: -0.0225 , -0.0021), but not by way of communication satisfaction (bootstrapped CI included 0).

Discussion: Results highlight the importance of considering depression when examining the effects of relationship satisfaction on CFS symptoms. Further mechanism-based, longitudinal research might identify relationship-related mediating variables that can be targeted therapeutically.

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D295

10:00 AM-11:00 AM

THANK GOODNESS I'M FEMALE (TGIF) AND GIRLS ACTION LEAGUE (GAL) DETER FEMALE PEER RELATIONAL AGGRESSION ACROSS 6TH GRADE

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Background: Adolescence is a time of increased peer relational aggression (bullying) among girls. Thank Goodness I'm Female (TGIF) and Girls Action League (GAL), created by 2 non-profit organizations in response to a student's request, are programs designed to empower girls to support each other and deter increase in peer relational aggression across 6th grade.

Methods: A quasi-experimental repeated measures design with attention control group was selected for use in this outcome evaluation. Parental consent and participant assent were obtained. The experimental 6th grade cohort recruited from 2 Ohio middle schools received TGIF and GAL programs in fall and spring semesters, respectively, while an attention control cohort was recruited from a comparable school received Pharming Effects, a prescription drug misuse prevention program, in fall. Participants completed a self-administered online survey at 3 time points: 1) baseline: the beginning of the fall semester, 2) 1st follow-up: the end of the fall semester after receipt of TGIF (experimental) or Pharming Effects (control), and 3) 2nd follow-up: end of the spring semester, after GAL participation (experimental). Measures included developmental asset profile, gender identity, adolescent femininity ideology, defending behavior when witnessing relational aggression, self-reported peer aggression and victimization, and knowledge regarding prescription drug misuse. Participants received pizza lunches at each survey administration, and a \$5 gift card for completing all 3 surveys.

Results: One hundred, female identified, 6th graders enrolled in the 2016–2017 school year study (n=61 experimental, n=39 control). Follow up rates among experimental and control participants, respectively, were 83% and 90% at the 1st follow-up and 87% and 85% at the 2nd follow-up. Group differences were not found at baseline or the first follow-up. However, in comparison to the control group, exposure to the TGIF & GAL programs, combined, was significantly associated with lower rates of victimization by peers (adj β =-2.5, p=.0009), lower rates of aggression towards peers (adj β =-0.8, p=.03), and higher total developmental asset scores (adj β =4.2, p=.02) at the end of 6th grade, controlling for baseline scores.

Conclusion: Exposure to TGIF and GAL were effective at deterring an increase in relational aggression and victimization, and helping girls maintain developmental assets, across the 6th grade year.

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D296

10:00 AM-11:00 AM

THE IMPORTANCE OF GROCERY STORE BASED INTERVENTIONS IN DECREASING CHRONIC DISEASE PREVALENCE IN THE CITY OF DETROIT

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Background: Obesity, cardiovascular disease, and diabetes have been shown to more negatively impact low-income, minority communities. Geospatial studies have debated the connection between environmental indicators and obesity prevalence rates. Most studies used counts of grocery stores rather than indexing the availability, price, and quality of food items at stores. Early research looking at obesity and availability in Detroit found that family income was more highly correlated with healthy eating than distance to a grocery store.

Objective: The purpose of this study was to examine potential correlation between neighborhood effects in Detroit including access to healthier, affordable, and quality food options, and lower prevalence of chronic diseases.

Methods: Data were collected using a modified Nutrition Environmental Measures Survey (NEMS). Full-line grocery stores were identified from a database maintained by the Green Grocer Project. Each store was verified, visited, and surveyed using the NEMS criteria. Chronic disease prevalence data were used from the CDC/RWJF 500 Cities project which relies on the BRFSS 2014 in order to generate census tract level small area estimates. Data were analyzed by measuring the number and average score of grocery stores within a 1 mile radius of the census tract centroid. The store data was then paired with corresponding 500 Cities data for high blood pressure, chronic heart disease, cholesterol, diabetes, and obesity for adults age \geq 18.

Results: When looking at the prevalence of chronic disease by census tract, there were only two correlations found that held statistical significance: obesity was negatively correlated with the NEMS score, $r = -0.138$, $p < 0.05$, and high blood pressure was negatively correlated with store count (range 1 to 6), $r = -0.128$, $p < 0.05$. Furthermore, there was a significant positive correlation found between a census tract having a higher store count within a 1 mile radius, and the NEMS score for that tract, $r = 0.195$, $p = 0.002$.

Conclusion: Typically research focuses on the environmental impact of biobehavioral outcomes, but there is potential for communities facing higher rates of obesity to impact their environments through targeted food retailer interventions. Further work is necessary in establishing other possible correlations between biobehavioral disparities and the availability, price, and quality of healthier food options within specific neighborhood areas. Furthermore, from the established correlation, future interventions should be focused towards food retailers in areas that have fewer grocery stores.

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D297

10:00 AM-11:00 AM

THE NEXUS BETWEEN HOUSING INSTABILITY AND INCARCERATION: EARLY TRAUMA, CRIMINOGENIC RISKS AND HEALTH AMONG WOMEN EXITING JAIL

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Introduction: The role of adverse childhood events (ACEs) on the lives of women with experiences in the criminal justice system is well documented with these early traumatic experiences contributing to criminogenic risk and health/wellness among women in the criminal justice system. Current measurements of ACEs include a variety of potential traumatic events that may be common among youth but may not capture the specific types of early trauma experienced by women with involvement in the criminal justice system. Experiences of incarceration and instable housing are intricately intertwined with both increasing risk for the other. The Present Study: Given the nexus between incarceration and homelessness, housing insecurity was added as a potential ACE to examine whether trauma resulting from childhood experiences of housing insecurity may contribute to criminogenic risk factors and overall health and wellness among women with experiences in the criminal justice system.

Methods: Women in county and state jail participated in a structured interview immediately upon release. Participants were asked about ACEs, criminogenic risks (e.g., LSI-R), and their current physical and mental health (e.g., Depression - PHQ-2). Two items were added to the ACE to explore early experiences of housing instability. Participants received a \$50 gift-card to compensate them for their time.

Results: Reliability of the ACE with the addition of the housing instability items was good ($\alpha = .72$) relative to the Cronbach's alpha if the items were removed ($\alpha = .65$). Housing instability was significantly related to reported arrest before the age of 16 with over double the number of participants with early housing insecurity reporting early arrest relative to those with stable housing conditions throughout childhood ($X^2 = 6.86, p < .01$). In a multivariate model including all ACEs, housing insecurity emerged as the only significant predictor of arrest before the age of 16. Early experiences of housing insecurity was also significantly related to depression ($F = 10.85, p < .005$), emerging as the only significant ACE in a multivariate model ($b = 1.26, p = .01$).

Discussion: Adding housing instability to the ACE may help to identify women at increased risk for early incarceration and depression. This data informs the importance of targeted interventions towards housing insecure youth. The present data was from a larger study evaluating an intervention providing trauma-informed wraparound care to women upon release from jail/prison. The importance of diverse forms of early trauma on the lives and wellbeing of women with experiences in the criminal justice system points to the importance of programs that provide stable housing with a focus on trauma-informed care.

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D298

10:00 AM-11:00 AM

TOWARDS MEASURING CONTEXTUAL DISTRESS INCLUDING RACE-BASED STRESS IN THE ONCOLOGY ARENA

Kimlin Ashing, PhD¹, ndifreke Etim, PhD¹, Bin Xie, PhD², Veronica Jones, MD¹, Anna Napoles, PhD, MPH³¹City of Hope, Duarte, CA; ²Claremont Graduate University, Claremont, CA; ³UCSF School of Medicine, San Francisco, CA

The deleterious health effects of race-based distress including discrimination and racism are receiving increasing prioritization (American Psychological Association, 2016; Krieger, 2017). The emphasis on understanding and measuring the effects of distress on health, brings long over-due attention and new opportunities for investigating the intersectionality of race-based stress with broad contextual (i.e., behavioral and place-based) determinants of health. This abstract presents an investigation that aims to address the troubling gap in our science regarding measuring patient reported contextual distress including race-based distress in the oncology arena. The goal is to create a tangible assessment of distress including race-based distress that can translate into meaningful, systemic policies and practices to address discrimination and inform interventions that benefit patients and communities affected by discrimination. A total of 320 BCS (88 African-American and 232 Latina-American) recruited from the California Cancer Registry and hospital registries completed a self-report questionnaire assessing demographic and cancer-related medical status, and healthcare and social environment/daily-living discrimination. BCS between 26 and 89 years (mean=54.5) completed an 18-item stress Life Stress Scale to rate multiple sources of stress including discriminatory and race-based stresses. Exploratory factor analysis was conducted using maximum likelihood analysis. Factor analysis and item refinement yielded a two-factor solution with racism and discrimination loading as Factor 1 and accounted for 21% of the total variance. Factor 2 - 13-items that accounted for 47% of the total variance, identifying stress related to was related to disease outcomes and socioeconomic loaded as a single factor. The Cronbach's alpha for these four items was 0.87 (95% CI = .84 - .89), suggesting that the items have relatively high internal consistency. Additionally, the distribution of response to Factor 1 is significantly different between African Americans and Latinos; while the distribution of responses to Factor 2 is undifferentiated for African Americans and Latinos. Overall, this area of research holds great promise for better understanding the health effects of racism and discrimination, and stimulating equity efforts in health services and behavioral medicine science and practice towards reducing health disparities.

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D299

10:00 AM-11:00 AM

“WHAT WOULD MAKE YOUR LIFE BETTER?”: UNMET BASIC NEEDS, HEALTH, AND HEALTH BEHAVIORS AMONG MEDICAID BENEFICIARIES

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Unmet basic needs—including those for food, shelter, and utilities—have been associated with negative outcomes, including higher mortality, worse self-reported health, and higher levels of depressive symptoms. We sought to examine the association between unmet basic needs, health, and health behaviors in a national sample of adults on Medicaid, as well as participants' perceptions of what would make their lives better.

In 2016–2017, people with Medicaid insurance in the U.S. completed a survey about demographics, health, health behaviors, life values, perceived stress, and unmet basic needs. Seven items assessing basic needs were combined into an index in which higher scores indicated higher levels of unmet needs. Participants were also asked what one thing they believed would make their lives better. Participants were recruited through a range of methods (letters, emails, phone messages, fliers, and volunteer databases) and were eligible if they were ≤ 18 , had Medicaid, and spoke English or Spanish. Surveys were completed online using Qualtrics. Analyses were conducted in SPSS. Results are for participants who took the survey in English and answered at least one basic needs question ($N = 1217$).

The sample was predominantly female (87%); most had at least one child 18 or younger living in the home (71%) and reported household income $< \$20,000$ (52%). 51% were White and 35% were African American. Average age was 36 ($SD = 12$). Mean number of unmet basic needs was 1.3 ($SD = 1.3$). The most common needs were not enough money for unexpected expenses (54%) and not enough space in the home (25%). The most frequent answers to “What would make your life better?” were “Taking care of your family” (22%) and “Helping your child(ren) thrive” (13%). Multivariate analyses controlling for income, sex, marital status, employment, age, and presence of children in the home showed that increasing levels of unmet basic needs were positively associated with stress and negatively associated with self-reported health, exercise, and fruit/vegetable consumption ($p < .01$ for all).

Results add to the growing body of evidence about the relationship of unmet basic needs and health. Interventions such as navigators that help people meet basic needs may hold potential both to help low-income people improve their economic situations and to improve their health. Medicaid beneficiaries with children may be especially receptive to interventions designed to address the needs of the entire family.

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D300

10:00 AM-11:00 AM

AN ASSESSMENT OF HEALTH DISPARITIES AMONG A COMMUNITY SAMPLE OF LGBQ COLLEGE STUDENTS

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Virginia Commonwealth University, Richmond, VA

Lesbian, gay, bisexual, and queer (LGBQ) individuals are a marginalized population in the United States, and this status places them at a greater risk for adverse health outcomes, such as tobacco and substance use, obesity, cancer, sexually-transmitted infections, violence, mental health issues, and suicide. The present study used individual- and microsystem-level data from the American College Health Association (ACHA)-National College Health Assessment (NCHA) to compose a risk assessment for LGBQ students at a mid-Atlantic university. The study incorporated various levels of the ecological social model in an analysis of potentially influential factors on the development of LGBQ health disparities. 856 participants completed a self-administered anonymous survey that included questions assessing a broad variety of health indicators, such as alcohol, tobacco, and other substance use, sexual health, mental health, nutrition, and personal safety and violence. A significant minority of the sample identified with a sexual orientation other than heterosexual ($n=184$, 21.6%). Sexual minority students reported significantly higher rates of various types of substance use [e.g., sedatives $\chi^2(1, N=856)=3.543$, $p\chi^2(1, N=856)=3.198$, $p\chi^2(1, N=856)=10.813$, $p\chi^2(1, N=856)=11.649$, $p\chi^2(1, N=856)=13.157$, $p\chi^2(1, N=856)=29.048$, $p\chi^2(1, N=856)=38.436$, $p\chi^2(1, N=856)=6.210$, p

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D301

10:00 AM-11:00 AM

CARING AND COPING: THE ROLE OF INFORMATION IN FAMILY-BASED ILLNESS MANAGEMENT

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Background/Significance: Family-based care is critical for effective chronic illness management, but behavioral interventions may not account for the role of information in this care. An understanding of this relationship may inform novel informatics interventions.

Purpose: To examine the relationship between collaborative information behavior (CIB) and both coping and social support in families managing chronic illness. Family coping is defined as problem-solving and behavioral strategies used in difficult situations, and social support as a coping resource. CIB includes 1) mediated information acquisition (e.g., caregiver search the Internet for a patient) and 2) joint information acquisition (e.g., caregiver and patient search the Internet together).

Methods: 38 families managing Type 2 Diabetes or HIV/AIDS were recruited, including 38 patients and 59 caregivers. Families participated in 2 individual and 3 family group semi-structured interviews over 2 years. At times 1 and 5 (T1, T5), participants completed a survey with a 13-item CIB scale, the Family Crisis-Oriented Personal Scale and the Multidimensional Survey of Perceived Social Support (PSS).

Results: CIB was associated with the external coping patterns of acquiring social support (T1: $r=.28$, $p=.006$; T5: $r=.36$, $p=.003$) and mobilizing family to seek community resources (T1: $r=.25$, $p=.01$; T5: $r=.25$, $p=.04$). Similarly, interviews showed that caregivers approached organizations to help with practical needs such buying medication and patients sought experiential knowledge from relatives with a disease history. Among patients, PSS was associated with joint information acquisition at T1 ($r=.30$, $p=.04$) but not T2. Among caregivers, there was an association between mediated information acquisition and PSS (T1: $r=.31$, $p=.02$; T5: $r=.33$, $p=.04$, T5). Qualitative results showed that CIB was seen as emotionally supportive: expressions of caring and mutual respect. CIB was part of tangible support, including adapting healthcare recommendations to daily life and identifying and responding to crises.

Conclusions: CIB was integral to both coping and social support in families, though patients and caregivers may experience the CIB-support relationship differently. Informatics interventions could facilitate CIB, with specific options for caregivers and patients. This intervention-supported CIB could be a pathway towards facilitating supportive interactions and resource mobilization in families managing chronic illness.

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D302

10:00 AM-11:00 AM

CLASSISM AND ALCOHOL USE: RACIAL DIFFERENCES IN THE MODERATING EFFECT OF ATTITUDES TOWARD GOD

Erin Smith, MS, Erin Smith, MS, Sarah Griffin, MS, Allison Williams, MS, Paul B. Perrin, PhD, Bruce Rybarczyk, PhD

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Background: Individuals living in poverty experience a profound amount of stress and are likely to be exposed to class-based discrimination (i.e., classism). Experiences of discrimination have been linked to greater alcohol use, which has been consistently linked to chronic stress and low socioeconomic status (SES). Personal religiosity may protect individuals experiencing discrimination against alcohol use. However, racial differences in discrimination, religiosity, and alcohol use exists for White and Black individuals which may impact this relationship. Despite the abundance of work linking SES and race to health and problematic drinking, little research has examined the potential association between experiences of classism and drinking or the role of religious coping, especially in the context of race.

Objectives: The purpose of this study was to examine the effect of classism on problematic drinking, as moderated by comfort with God, and determine the presence of conditional effects of this moderated association by race.

Methods: Participants (N = 189) were patients of an urban, safety-net primary care clinic and completed questionnaires assessing experiences of classism, attitudes towards God, and alcohol use. Data were collected from 2015–2016 and analyzed using the Hayes PROCESS macro.

Results: There was a significant main effect for race predicting problematic drinking with Black participants having lower alcohol use scores than their White counterparts. Two-way interaction analyses identified a significant comfort with God by race interaction, whereby comfort with God was more protective against excessive alcohol use for White participants than for Black participants. Conditional direct effects showed that experiences of classism were associated with higher alcohol use for Black participants who endorsed low to moderate, but not high, levels of religiosity. No conditional effects were observed for White participants.

Conclusion/Importance: This study provides insight on how religion, classism, and race may interact to shape excessive alcohol use in low-income, urban primary care patients. Clinicians' awareness of risk and protective factors, as well as how race tempers the effects of such factors, is vital to providing better care for this population.

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D303

10:00 AM-11:00 AM

DYADIC COPING, SELF-EFFICACY FOR WEIGHT LOSS, AND WEIGHT IN HISPANIC MALES ENROLLED IN A WEIGHT LOSS INTERVENTION

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Introduction: Hispanic men experience the highest levels of overweight and obesity in the US. As obesity is associated with myriad diseases including cardiovascular disease, diabetes, and cancer, weight loss is becoming increasingly important for this at-risk group. Weight loss activities such as diet restriction and exercise can be stressful, potentially affecting one's confidence in their ability to lose weight (self-efficacy for weight loss). During stressful times, couples often rely on each other to cope with the situation at hand. Dyadic coping may be especially important for Hispanics who value close, supportive, familial relationships.

Purpose: The aims of our study were to assess the following in Hispanic men enrolled in a weight loss intervention: 1) the association between dyadic coping and weight, and 2) the association between dyadic coping and self-efficacy for weight loss.

Methods: A community sample of 50 Hispanic men enrolled in gender- and culturally-sensitive weight loss intervention (GCSWL). Participants completed surveys and were weighed at baseline, 12 weeks, and 24 weeks. The weight loss intervention included two arms: 1) a GCSWL, and 2) a wait-list control (WLC) including a GCSWL plus mHealth technology. Participants completed the Dyadic Coping Inventory (DCI), and the Weight Efficacy Lifestyle Questionnaire (WEL). Dyadic coping was person-mean-centered to disaggregate within-person and between-person longitudinal effects. Linear mixed models using an unstructured mean and covariance were utilized to assess both aims. Control variables included age, education, treatment condition (treatment vs. wait-list control), and diabetes diagnosis status.

Results: Men had a mean age of 43.3, and a mean, baseline BMI of 34.4 kg/m². Forty-six men reported having a significant other, and 37 men reported being married or cohabiting with their partner. Dyadic coping was marginally, negatively associated with the subsequent measure of weight (intervals of 12 weeks), $b = -11.9$, $se = 5.4$, $t(11) = -2.19$, $p = 0.05$, 95% CI (-22.87; -0.99). Additionally, dyadic coping was positively, associated with the concurrent weeks' self-efficacy for weight loss, $b = 1.16$, $se = 0.4$, $t(7) = 2.89$, $p = 0.02$, 95% CI (0.30; 2.01).

Conclusion: Dyadic coping may be an important form of support utilized by Hispanic men attempting to lose weight. Future research may benefit from considering the important aspects of partner and spousal influences on health in this population.

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D304

10:00 AM-11:00 AM

EXAMINING BODY-FOCUSED SOCIAL COMPARISON MOTIVATIONS IN COLLEGE WOMEN USING ECOLOGICAL MOMENTARY ASSESSMENT

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Although the social comparison theory postulates that people have a drive to compare themselves to others for self-evaluation, recent research suggest people may also be motivated for self-improvement (i.e., to make positive changes). These two motivations have been examined experimentally as women make upward body-focused comparisons (i.e., comparisons between themselves and people they perceive to be thinner or more physically fit), but have not been examined in real-life settings. The present study examined the natural occurrence of these two motivations (self-evaluation, self-improvement) and their associations with body dissatisfaction and thoughts of exercising using ecological momentary assessment (EMA). Undergraduate women ($N=74$, ages 18–25) completed surveys five times daily for seven days via a smartphone survey app. EMA surveys included measures of body-focused comparisons, body dissatisfaction, and thoughts of exercise. Baseline measures of physical activity, body dissatisfaction, and tendency to engage in appearance social comparisons were collected prior to EMA and examined as moderators. Multilevel analyses revealed that both momentary self-improvement and self-evaluation ratings were positively associated with thoughts of exercise ($ps<.05$). Moderator analyses revealed baseline physical activity and body dissatisfaction moderated the association between self-improvement motivations and thoughts of exercise; these associations were stronger for women who reported more baseline physical activity ($p=.01$) and less body dissatisfaction ($p=.02$). Baseline social comparison tendency moderated the associations between self-evaluation motivations and both thoughts of exercise and body dissatisfaction, as well as self-improvement motivations and body dissatisfaction ($ps<.05$). Stronger positive associations between the motivations and body dissatisfaction were found for women with lower baseline social comparison tendency ($ps<.05$). For the self-evaluation and thoughts of exercise relationship, a stronger positive relationship was found for women with higher baseline social comparison tendency ($p<.001$). This is the first study to assess naturally occurring self-evaluation and self-improvement body-focused comparisons in women's everyday lives. Both motivations were associated with momentary thoughts of exercise, but person-level factors moderated these associations. In particular, the stronger association between self-improvement and thoughts of exercise for women with more baseline physical activity and lower body dissatisfaction suggests self-improvement comparisons may contribute to positive thoughts and attitudes women have about their bodies and exercise. These findings about self-improvement comparisons have the potential to help inform interventions aimed at increasing physical activity in women.

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D305

10:00 AM-11:00 AM

EXAMINING CHALLENGES AND LIMITATIONS OF MEASURING FINANCIAL STRAIN IN HEALTH OUTCOMES RESEARCH: A LITERATURE REVIEW

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The examination of financial strain in health outcomes research has been growing steadily for the past four decades. Despite this increase, few studies have addressed the limitations and challenges associated with collecting these personally sensitive data, especially in the most marginalized populations. The purpose of this literature review is to 1) briefly summarize key constructs of flagship financial strain scales commonly used in health outcomes research; 2) report repeated financial strain measurement challenges and limitations, and 3) identify demographic trends of financial strain, particularly among vulnerable subpopulations. A search was conducted in 2017 via the SCOPUS database. Articles were included in this review if the full-text version was available to the authors, measured financial strain, measured a health-related or health outcome, and were published within the last 40 years. Based on these criteria, we identified 121 articles for this review. Four financial strain scales were used in 58 different studies, representing the most frequently used financial strain scales in health outcomes research. The most commonly investigated health outcomes in this literature review were mental health, health behaviors, and self-rated health. Findings revealed repeated methodological limitations throughout the reviewed literature. A repeated methodological limitation observed was a choice of study design that failed to compliment study objectives. This limitation was observed in five studies aimed to measure chronic or accumulated financial strain, but used a cross-sectional study design that took a single measure of financial strain, unlike the more appropriate longitudinal study designed employed by three studies. Another repeated limitation was the use of customized scales that failed to incorporate both absolute financial need or lost and perceived need, as observed in 16 studies. Common financial strain trends were also observed within certain underrepresented populations including the elderly, women, racial and ethnic minorities, and individuals from low socioeconomic subpopulations. These findings revealed recurrent challenges and limitations associated with financial strain data collection, but rarely reported. Implications of these findings suggest a need for validated measures and a comprehensive methodological framework for the measurement of financial strain.

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D306

10:00 AM-11:00 AM

FINANCIAL STRAIN IS ASSOCIATED WITH HIGHER STRESS AND REDUCED EXECUTIVE FUNCTION

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Background: A growing body of research demonstrates that living with financial scarcity impairs cognition. Habitual tasks like budgeting impair cognition when financial resources are limited. Additionally, financial strain is associated with greater stress. The specific executive functions impacted by financial scarcity and the degree that stress mediates these relationships are not well understood.

Purpose: The purpose of this study was to identify decrements in executive function that are associated with financial scarcity and test whether stress mediates the relationships between financial scarcity and executive function.

Methods: Participants were 249 female Amazon Mechanical Turk workers recruited to be part of a larger study. We oversampled individuals currently living with financial scarcity (32.9% had 2 or more experiences of financial scarcity) Participants' median income was \$55K, median education was a bachelor's degree; 83% were white; and mean age was 37.2 (SD=11.9)). We quantified financial scarcity by counting the number of current financial scarcity experiences, as described in Butterworth et al (2012) (e.g., welfare, pawned items to make ends meet, skipped meals). Stress was measured with Cohen's Perceived Stress Scale, and executive function was assessed with the Behavior Rating Inventory of Executive Function for Adults (BRIEF), which is composed of 9 scales (inhibit, shift, emotional control, self-monitor, initiate, working memory, plan/organize, task monitor, and organization of materials). We used multivariable linear regression to examine associations between financial scarcity, stress, and executive function and bootstrap estimates to test for indirect effects of financial scarcity on executive function through stress. Because poverty in childhood is a plausible cause of poverty in adulthood, and age and education influence executive function, we controlled for these in all analyses.

Results: All relationships were significant for all 9 BRIEF scales in unadjusted analyses. After adding controls, financial scarcity was associated with 3 BRIEF scales: emotional control, initiate, and plan/organize (all Bs=0.51 to 0.68, all ps<0.04) as well as stress (B=0.95, p<0.0001). There were significant indirect effects of financial scarcity on the 3 BRIEF scales through stress (indirect effects=0.47 to 0.61, 79.3% to 98.9% of total effect).

Discussion: Living with financial scarcity may cause stress and, in turn, difficulty modulating emotions, starting tasks, and sticking with future-oriented goals. Policies to reduce poverty may have the added benefit of decreased stress and improved executive function. The impact of financial scarcity on executive function might be mitigated by stress-reduction interventions, such as mindfulness and exercise programs, which likely must be tailored to individuals who struggle to make ends meet.

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D307

10:00 AM-11:00 AM

GREEN SCHOOLYARDS IN URBAN NEIGHBORHOODS: SETTINGS FOR PHYSICAL ACTIVITY AND PRO-SOCIAL BEHAVIOR

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Children are increasingly growing up in high-crime urban environments with limited access to green spaces (Markevych et al., 2014). High-crime neighborhoods may contribute to health disparities through associations with few opportunities for physical activity (PA) (Keenshaw-Prince et al., 2015) and high levels of negative externalizing behaviors among children (Manly, Oshri, Lynch, Herzog, & Wortel, 2013). Studies show that park renovations in urban communities promote increased PA (Cohen et al., 2015; Tester & Baker, 2009). In particular, renovated green schoolyards may most effectively promote PA and positive social interactions among urban youth (Anamathen et al., 2011; Anderson et al., 2015; Chawla et al., 2014). Utilizing the RE-AIM framework, the current study examined child PA and social interactions in the context of recently renovated green schoolyards within high-crime urban neighborhoods. Students in pre-k through 8th grade were assessed across two time points 6-months apart to examine the sustainability of outcomes over time. Additionally, gender and ethnicity were tested as characteristics influencing PA and social interactions. The study observed children on three green schoolyards around the city of Chicago (total observations N = 7,025) in spring and fall of 2016 (i.e., T1 and T2). Children were pre-k through 8th grade (Median = middle school; 55% male). The majority of children observed were African American (44.7%) or Latino/Hispanic (39.2%). Data were collected on schooldays and weekends. The study utilized behavioral mapping (Cosco, Moore, & Islam, 2012) to capture PA (Child Activity Rating Scale; Durant et al., 1993) and social interactions (System for Observing Children's Activity and Relationships during Play; Ridgers, Stratton, & McKenzie, 2010). Several statistical analyses were used to answer study questions, including t-tests, analyses of variance, and chi-square tests. Children evidenced a range of PA on the renovated green schoolyards, with nearly one-third walking or running when observed at T1. Males were more active than females (t(3250)=7.55, p<.001). There were no ethnic differences in PA. Follow-up analyses demonstrated increases in PA from T1 to T2 (t(7024) = -2.84, p<.001). Socially, 64% of children were interacting with others when observed at T1. Females (t(3253)=-3.44, p<.01) and African American children (F(4, 3245)=3.81, p<.01) were more likely to interact with others on the schoolyard. Of observed interactions, 43% were positive and 4% were negative. Negative interactions, while few, were more common among African American children (F(4, 2037)=3.075, p<.05). Follow-up analyses demonstrated more positive interactions and fewer negative interactions at T2 compared to T1 (x²= 98.80, p<.001). Results suggest that renovated green schoolyards may combat health disparities by providing zones of PA and positive social interactions within high-crime urban neighborhoods.

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D308

10:00 AM-11:00 AM

GROUP-LEVEL PREDICTORS OF NCAA ATHLETES' ATTITUDES TOWARD RISKY BEHAVIOR

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While involvement in intercollegiate sport is broadly beneficial, student-athletes also face many opportunities to engage in risky behavior. In the current study, we investigated how athletes' perceptions of their sport team environment predicted attitudes towards: alcohol, marijuana, drinking-and-driving, playing through concussion, performance-enhancing drug use, and hazing rituals. Existing evidence indicates that peer-acceptance and social cohesion may relate to risk-taking attitudes (e.g., Grossbard et al., 2009; Zamboagna et al., 2008), although researchers have yet to determine whether these relations are due to variation occurring within or between groups. We hypothesized that athletes who reported stronger feelings of peer-acceptance and social cohesion, relative to teammates, would have riskier attitudes towards the behaviors in-focus. In contrast, we hypothesized that, at the team-level, higher group-wide perceptions of peer-acceptance and social cohesion would create an environment of psychological safety that would *negatively* relate to risk-taking attitudes. Participants were 389 NCAA athletes from 23 teams, representing a variety of sports. Controlling for gender, age, tenure with team, and self-esteem, we specified six multilevel models to examine how between-group and within-group variation in peer-acceptance and social identity related to each of the risky attitudes. Across all six behaviors, models accounted for between 5–20% of the variance in athletes' risk-taking attitudes. At the individual level, peer-acceptance was *positively* associated with riskier attitudes towards alcohol ($b = .21, p < .05$), hazing ($b = .27, p < .01$), and playing through concussion ($b = .26, p < .01$). Meanwhile, individual perceptions of social cohesion were *negatively* associated with playing through concussion ($b = -.16, p < .05$). At the group level, athletes who belonged to teams with high peer-acceptance, relative to other teams, were less likely to support playing through concussion ($b = -.98, p < .05$), while those belonging to teams with high ratings of social cohesion were *more* likely to support playing through concussion ($b = .38, p < .05$). These findings extend theoretical understanding of how peer relationships shape athletes' attitudes towards risky behavior. Despite the value in forging strong relationships to reduce some risky behaviors, this research reveals how group environments may also support risky behavior and raises numerous theoretical and practical questions (i.e., do tightknit teams create an atmosphere where athletes make bodily sacrifices for the sake of the team?).

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D309

10:00 AM-11:00 AM

INDIVIDUAL, NATIONAL AND GLOBAL ESTIMATION OF MORTALITY RISK FACTORS: ESTIMATIONS FROM GERMAN UNIVERSITY STUDENTS

Ftan 2017 AG1, N/A¹, Gertraud Maskarinec, MD, PHD², Claudio Nigg, Ph.D.³¹German University Students, Honolulu, HI; ²University of Hawaii Cancer Center, Honolulu, HI; ³University of Hawaii, Honolulu, HI

Background: German university students of different fields reported about factors contributing to their health. This was based on their personal experience, public opinion, media and special interests. The goal was to assess differences in personal health expectations between both participants' estimations versus what is known.

Methods: Participants ($n=79$; 31% female; 29% studying the Humanities, 43% Math/Informatics/Natural Sciences/Technology, 28% Medicine/Psychology) in a summer academy completed a questionnaire addressing mortality risk factors for themselves, their nation (Germany), and the world. The risk factors provided were smoking, accidents, poor sanitation, poverty, poor environment, physical inactivity, stress, poor diet, and infectious diseases. Further, they reported what the most important health achievements were in the past 200 years, and what they believed would be the most important efforts to improve health in the future.

Results/Discussion: At the individual level, stress (64%) and accidents (53%) were the highest mortality risk factors, whereas nationally they were physical inactivity and poor diet (65% each), and globally they were poverty (80%) and poor sanitation (76%). Most participants were able to evaluate the national and global risks accurately but not for their own risk factors. The individual estimation may reflect psychological coping with one's own responsibility for one's mortality. Therefore, more education especially about how risk factors influence one's own health may be helpful.

The most important health achievements over the past 200 years were antibiotics (31%) and vaccines (27%), whereas education (25%) was deemed as most important for the future. These answers show an awareness of the relation between education and future mortality risks. Therefore, we recommend supporting education globally to decrease mortality risks.

The participants were homogeneous in that they were all scholars of an academic foundation. However, they did represent a broad range of content areas allowing some confidence in the results' generalizability. Future studies using a more representative sample are likely to be informative on University students' understanding of mortality risk factors.

Ftan AG 1 participants in alphabetical order: Julia Dorn, University of Mannheim; Sophia Galle, Universität Würzburg; Indira von Gierke, University of St. Andrews; Paul Guthmann, University of Erfurt; Danny Jazmati, University Hospital Essen; Niklas Lefevre, Nordakademie Elmshorn; Johannes Pankert, Karlsruher Inst. für Technologie; Katharina Reimann, Univ. Mannheim; Verena Rothammer, Universität Regensburg; Jon von Stritzky, Universitätsklinikum Hamburg-Eppendorf

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D310

10:00 AM-11:00 AM

INSTA-INFORMATION: SOCIAL ENDORSEMENT AND YOUNG ADULTS' PERCEPTION OF SOCIAL MEDIA DELIVERED HEALTH INFORMATION

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Background: According to the Health Research Institute, 90% of young adults (YA) would engage in health activities or trust information on social media. Given that YA receive a host of potentially inaccurate health information via social networking sites (SNS) and are more likely to pay greater attention to positively socially endorsed SNS messages, it is important to understand YAs' perception of the accuracy of such messages. Thus, the present study examined whether YA would perceive positively socially endorsed images (i.e., images with a high number of likes) as containing accurate health information. We hypothesized that YA would select images with high likes as accurate.

Method: Data were collected from YA ages 18–21, via Amazon Mechanical Turks ($N = 122$, $M_{Age} = 20$, $SD_{Age} = .95$ 35% White, 68% male, 36% students, 69% US born). Participants completed demographic measures, the eHealth Literacy Scale (eHEALS), and an Instagram task. In the Instagram task, participants were presented two images with contradictory health information (e.g., image A: 100% fruit juice is healthy; image B: 100% fruit juice is unhealthy). Of these two images, participants were asked to select the image with accurate health information. Each participant randomly responded to three image sets from the pool of nine. Within the nine image sets, four images with high likes contained accurate health information and five images with low likes contained accurate health information. Frequencies were computed to examine participants' response to each image set.

Results: Participants average eHEALS score was 2.47 ($SD = 1.01$), 27% often used social media for health information, and 23% responded correctly to all three images. For six image sets, participants were more likely to select the image with the high amount of likes as accurate. This response option was correct for four of the six images. For three image sets, participants were more likely to select the image with the low amount of likes as accurate. This response option was correct for all images.

Discussion: Our hypothesis was partially supported; YA perceived more positively socially endorsed images as accurate. However, participants also correctly identified three low-liked images as containing accurate health information. Health literacy may play a role in these unintended findings. Thus, future studies should examine whether media health literacy is associated with YAs' perception of the accuracy of SNS delivered health information.

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D311

10:00 AM-11:00 AM

RELATION OF PRONOUN USE TO RELATIONSHIP AND HEALTH OUTCOMES: A META-ANALYTIC REVIEW

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There is a growing literature that documents how pronoun usage is related to relationship and health outcomes. The literature in this field, however, has produced mixed results. In order to better understand the results, we conducted a meta-analytic review of the studies relating personal pronoun usage to a variety of health and relationship outcomes: relationship quality, negative interactions, attraction and liking, depression and anxiety, treatment outcomes, physical symptoms, and physical health. We located 45 studies from 1989 to 2016 that correlated a measure of pronoun use to at least one relationship or health factor. Correlation effect sizes (r) and 95% confidence intervals were calculated within each category of pronoun type and outcome. The heterogeneity statistic (Q) was calculated to determine the degree to which effect sizes were consistent and the Fail-Safe N (N) was calculated to evaluate the robustness of effect sizes. Results showed that first-person plural pronouns (we, us, our) was associated with increased relationship quality ($r = 0.12$, 95% CI: -0.02, 0.25), decreased negative interactions ($r = -0.15$, 95% CI: -0.24, -0.05), and better treatment outcomes ($r = 0.12$, 95% CI: 0.03, 0.20). Second-person pronouns (you, your) were associated with increased negative interactions ($r = 0.31$, 95% CI: 0.14, 0.46). First-person singular pronouns (I, me, my) were associated with increased depressive and anxiety symptoms ($r = 0.13$, 95% CI: 0.01, 0.25) and decreased positive treatment outcomes ($r = -0.11$, 95% CI: -0.21, -0.01). We were able to examine moderators of the relations of pronoun use to depression/anxiety because there were a sufficient number of studies ($k = 16$) and Q statistic was significant. In sum, these findings suggest that the use of first-person plural pronouns is generally related to positive relationship and health outcomes. In contrast, the use of first-person singular and second-person pronouns is generally related to negative relationship and health outcomes. These findings have implications for medical treatment and therapy programs where specific language use may impact patient outcomes.

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D312

10:00 AM-11:00 AM

SOCIAL STRATIFICATION AND RISK FOR CARDIOVASCULAR DISEASE: EXAMINATION OF EMOTIONAL SUPPRESSION AS A PATHWAY TO RISK

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This paper examines whether there are socially stratified (e.g., socioeconomic position; SEP) differences in emotional suppression in a community sample of Black and White men, and whether such differences may help explain the aggregation of multiple biopsychosocial risk factors for cardiovascular disease at lower SEP (social support, depression, cardiovascular stress reactivity). Study 1 tests whether multiple indicators of SEP show a consistent graded association with self-reported trait emotional suppression, and whether suppression mediates associations between SEP and perceived social support and depressive affect. In a subsample of participants from Study 1, Study 2 examines SEP and self- and observer reports of suppression during a laboratory anger recall task, and whether suppression during the task mediates associations between SEP and cardiovascular reactivity to the task (another potential pathway to risk).

Results: All measures of SEP were inversely associated with self-reported trait suppression and suppression statistically mediated the link between SEP and social support and depressive affect. SEP was not associated with self-reports or observer ratings of state suppression or cardiovascular reactivity during anger recall in the laboratory. However, suppression during anger recall by both self-report and observer ratings showed theoretically consistent associations with concurrent physiology.

Conclusions: Findings in this racially diverse sample of adult men suggest that socioeconomic disparities in emotional suppression may help explain parallel disparities in health-protective social relationships and health-damaging negative affect. However, SEP did not show reliable associations with multimethod behavioral measurement of state suppression or cardiovascular physiology during an anger recall task; hence, momentary changes in autonomic physiology do not appear a likely avenue to risk although suppression was reliably associated with physiology.

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D313

10:00 AM-11:00 AM

SOCIOECONOMIC STATUS REPORTING TRENDS IN THE APA JOURNALS: AN EPIDEMIOLOGICAL ANALYSIS OF THE PSYCHOSOCIAL LITERATURE

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Background. Socioeconomic Status (SES) is among the most robust psychosocial determinants of health and disease. Although specific metrics vary by field and population of interest, the inverse relationship between SES and health remains robust, reliable, and constant. Given the breadth of these effects, the 2006 APA Task Force Report on Socioeconomic Status recommended its standard reporting (like age, sex) as a critical demographic variable in all human factors research. The current aim was to examine SES reporting trends in all 93 APA journals for the last 5 years as a benchmark to inform efforts aimed at improving the quality of the scientific literature.

Method. Online searches using PsycINFO as the primary engine and complemented with additional databases (e.g., WebofScience) were conducted for each individual journal for the period of January 1, 2012 to December 31, 2016. Search terms derived from the APA Task Force Report were combined using Boolean-compatible syntactical array methods. Results were saved to Endnote X8.1 and screened for redundancy.

Results. A total of 24,087 papers publications were identified in all APA journals over the 5-year period. The overall prevalence of SES terms in those papers was 17.95% with no appreciable difference by year. Reporting rates varied from 0% to 100% with the median 5-year average reporting rate at 14.84%. A 10% random sample of papers reporting searched terms were downloaded as PDFs to ascertain where in the papers SES terms were being reported. Two coders examined each paper, noting the study type and sections of empirical papers where the terms were reported (abstract/intro, methods, results, discussion). Boolean searches were used and discrepancies were resolved by the two raters with a third weighing in when necessary. Of the 432 papers examined, 318 (73.61%) were identified as empirical in nature. Of these, 75.79% reported SES terms in the methods or results section.

Conclusions. Despite recommendations, the overall prevalence of SES terms in APA journals is quite low. However, when SES is reported in empirical papers it is generally occurring in the recommended sections. These findings document important limitations in the reporting quality of the literature and suggest the need for editorial interventions to establish guidelines and improve reporting standards.

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D314

10:00 AM-11:00 AM

STIGMA AND AVOIDANT COPING IN COLLEGE STUDENTS WITH CHRONIC ILLNESS

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Adults with chronic illness who encounter stigmatization often exhibit an avoidant coping style and experience significant detriments to health-related quality of life (HRQoL) and psychological and social functioning. The impact of these factors on college students' HRQoL and psychological and social functioning is not well understood. The two studies presented here tested the hypotheses that stigma and avoidant coping are associated with HRQoL, social functioning, and psychological well-being in undergraduates students who have chronic illness. Participants in both studies were undergraduates diagnosed with at least one chronic illness. They completed self-report measures online. In Study 1 (N = 145), stigma and avoidant coping significantly predicted diminished HRQoL, $R^2 = .508$, $F(2, 142) = 73.371$, $p < .001$, diminished social support, $R^2 = .051$, $F(2, 142) = 3.781$, $p < .05$, depression, $R^2 = .569$, $F(2, 142) = 93.686$, $p < .001$, and anxiety, $R^2 = .476$, $F(2, 142) = 64.625$, $p < .001$. Study 2 (N = 199) confirmed the results of Study 1 finding that stigma and avoidant coping significantly predict diminished HRQoL, $R^2 = .520$, $F(2, 196) = 106.180$, $p < .001$, depression, $R^2 = .487$, $F(2, 196) = 93.083$, $p < .001$, and anxiety, $R^2 = .401$, $F(2, 196) = 65.496$, $p < .001$, though the association with social support was not replicated. As hypothesized, stigma and avoidant coping were associated with diminished HRQoL, social functioning, and mental health in Study 1. Second study data suggests that experienced stigma and avoidant coping significantly predict diminished HRQoL and mental health, but not social functioning. Findings suggest that college students with chronic illness face significant challenges associated with and during their undergraduate career. Stigma and avoidant coping may be targets for intervention.

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D315

10:00 AM-11:00 AM

THE ECOLOGY OF MATERNAL CHILD HEALTH: HOW DRUG POLICING IMPACTS INFANT MORTALITY IN STRUCTURALLY DISADVANTAGED COMMUNITIES

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Despite the considerable monetary resources the United States devotes to health-care, its infant mortality rate ranks as one of the highest in the world. A disproportionate percentage of infant mortality stems from its urban minority population. This disparity can be largely attributed to the high levels of structural disadvantage, violent crime, and social isolation that characterize many urban communities in the US. A high proportion of infant deaths are linked to low birthweight and very low birthweight, which often results from pregnant women receiving late and/or inadequate prenatal care. Research has found that community-level violence and distrust of social institutions often plays a role in discouraging women from seeking prenatal care, partly to avoid public places, and partly to avoid perceived provider discrimination. And despite the fact that the police are deployed in communities to maintain public safety, their presence -- particularly aggressive enforcement activities in disadvantaged communities -- often contributes to (1) the distrust via compromised legitimacy, and (2) increased violence by creating power vacuums within block-level drug markets. To this extent, police are often viewed as more a hazard than a public health asset in troubled communities, which may further contribute to overall maternal child health outcomes. The present study integrates the social ecology of urban policing with the social ecology of urban health to examine the extent to which neighborhood-level drug enforcement (i.e., arrests) was associated with infant mortality counts across census tracts of the District of Columbia. The study used data from the US Census, the DC Metropolitan Police Department, and the DC Department of Public Health to construct Mixed Models and Geographically Weighted Regression that tested both the multilevel effects of drug enforcement on infant mortality, as well as conditional effects in specific neighborhoods. Findings indicate that while controlling for neighborhood violence and disadvantage, as well as a set of individual-level factors, drug arrests at the community level were associated with significant increases in infant mortality counts. In addition to illustrating the findings, the poster also includes a section that considers the implications for social policy.

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D316

10:00 AM-11:00 AM

THE IMPACT OF MALTREATMENT AND EARLY LIFE STRESSORS ON FOSTER YOUTH HEALTH AND WELLBEING

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Introduction: Teens in foster care have more physical and behavioral health problems than their peers (Woods et al., 2011). Youth enter foster care due to maltreatment, an early life stressor (ELS) they experience. Maltreatment and ELS likely contribute to health disparities for foster youth by increasing risks and subsequent health issues. This study examined associations among child-reported and child welfare-reported maltreatment, ELS, and physical and behavioral health issues (i.e., pain, BMI, mental health, substance use) captured in the electronic health record (EHR) of 151 foster youth. It was hypothesized that maltreatment and ELS would be associated with more medical and behavioral health problems.

Methods: Foster youth (N=151; 77% minority) ages 16–21 reported maltreatment, ELS, and substance use behaviors. Child-reported maltreatment and ELS were summed into three scales: trauma (e.g., being robbed), risk (e.g., parent mental health problem), and abuse (e.g., sexual abuse) exposure. Child welfare administrative records provided reason for entry into foster care (i.e. neglect, physical abuse, sexual abuse, emotional abuse, parental substance abuse) and number of placement changes. EHR provided data on medical (BMI, pain complaints (y/n), chronic conditions (y/n)) and behavioral health issues (mental health diagnoses). Analyses controlled for age of entry into foster care, current age, gender, and race.

Results and Discussion: There was a significant association of maltreatment and ELS with all four health outcomes; however, types of maltreatment and ELS were differentially related to each outcome. Risk exposure was positively associated with increased BMI (22% with BMI >30), substance use, and depression, but not with pain or other mental health concerns. Physical abuse was positively associated with BMI and bipolar disorder; sexual abuse was associated with bipolar disorder; and emotional abuse was positively associated with pain, substance abuse, trauma-related mental health concerns, ADHD, bipolar disorder, and depression. These findings indicate that it is important to assess maltreatment and ELS separately, raise awareness to healthcare providers, and distinguish among types of maltreatment, as they are differentially associated with a number of adverse outcomes.

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D317

10:00 AM-11:00 AM

INVESTIGATION OF HEALTH BEHAVIOR RISKS AMONG TRANSGENDER MEN, WOMEN, AND NONBINARY-IDENTIFIED INDIVIDUALS

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Transgender individuals are at heightened risk for health disparities including depression, anxiety, and poor access to healthcare. Similar to lesbian, gay, and bisexual individuals (LGB), this population experiences minority stressors that contribute to poorer health outcomes, and increase their overall experience of daily stress. However, the physical health disparities and needs of transgender individuals are unknown. Stress, mental health, and access to resources all increase barriers to engaging in healthy behaviors, increasing the likelihood that transgender persons will be at risk of poor health behaviors. Currently, population data that includes transgender identifiers is scarce, continuing to limit researchers' ability to investigate transgender health needs. The purpose of the current research was to explore the health risks of transgender individuals via a nonprobability online survey of lesbian, gay, bisexual, and transgender individuals (oversampling transgender individuals), to provide a similar demographic comparison (LGB) sample.

An anonymous online survey yielded 460 transgender and 523 nontransgender LGB respondents from 48 US States and DC. We compared the rates of health behaviors (e.g. physical activity (PA), fruit and vegetable consumption (FV), alcohol consumption, smoking history, and stress management) across transgender individuals and nontransgender LGB individuals. Overall, there were low rates of meeting recommendations for PA and FV for all individuals, and high reports of current smoking and stress across all identities.

Multivariate analysis of variance demonstrated interactions of transgender status and gender identity for physical activity and vegetable consumption. Although rates were still low, transgender men and nontransgender LGB women were most likely to consume vegetables, and transgender men, women, and nontransgender GB men were more likely to report engagement in physical activity. Nonbinary-identified individuals reported smoking rates similar to nontransgender LGB respondents, low rates of PA and FV, and stress rates similar to transgender men and women. The presentation of this research will include comparison of actual health behavior rates with the overall population, and primary health behavior concerns for transgender men, women and nonbinary persons individually. Discussion will focus on next steps for community based research and suggestions for practitioners working with transgender patients.

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D318

10:00 AM-11:00 AM

“I’M NOT THE ONE CARRYING THE BABY, BUT I’M WORRIED!”: A QUALITATIVE ANALYSIS OF STRESS IN EXPECTANT FATHERS

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Traditionally, women have been the focus of much research on psychosocial aspects of pregnancy; however, pregnancy can be viewed as a developmental phase and as a challenging process for men, also (Darwin et al., 2017). Limited research suggests that expectant fathers may experience distinct types of stress which have the potential to adversely affect their health and well-being (Forsyth, Skouteris, Wertheim, Paxton, & Milgrom, 2011). Thus, the goal of the present study was to examine the stress that men experience during a partner’s pregnancy.

The present study included men who were recruited from a university hospital midwifery practice (n = 7) and through social media platforms (n = 10). The majority of participants and their partners were White/European, and were between 28 and 42 years old. Semi-structured interviews lasting 15 to 20 minutes were conducted in person or by phone with each participant. Interviews included some items adapted for men from the Revised Prenatal Distress Questionnaire (Lobel et al., 2008), a well-validated measure of pregnancy-specific stress in women. Interviews were audio-recorded and transcribed for in-depth analysis.

Analysis of interviews followed the six core phases of the Sort and Sift, Think and Shift approach for qualitative research: data inventory, written reflection, reflective diagrams, categorization, bridging, and data presentation (Maietta, 2006). Two members of the research team independently reviewed interview transcripts and then met to exchange reflections on the data. Continuous discussion regarding the meaning of potential themes and topics advanced this dynamic qualitative analysis process. Six themes emerged from participants’ data regarding the types of stress they were experiencing during their partner’s pregnancy, listed in descending order of frequency of appearance: 1) health and well-being of the pregnant partner; 2) occupational and financial stressors; 3) health and change in lifestyle of the self; 4) health of the child; 5) familial stressors; and 6) the father role. Some men mentioned these themes more than once throughout their interview.

These results add to a body of evidence demonstrating that pregnancy is a stressful life event for male partners. We will use these findings to develop a quantitative measure of partner stress in order to advance research on the magnitude of this stress, its adverse consequences for families, and how these may be mitigated.

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D319

10:00 AM-11:00 AM

AN EXAMINATION OF THE RELATIONSHIPS AMONG AFFECT, DIURNAL CORTISOL SLOPE, AND MEMORY IN ELDERLY WITH COGNITIVE IMPAIRMENTS

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Introduction: Memory deficit is a common symptom of cognitive decline in older adults. It has been linked with emotional factors and flattened diurnal cortisol slopes. The present study aimed to evaluate the mediating role of diurnal cortisol pattern in the relationship between negative affect and memory and functional outcome in elderly with cognitive impairments.

Research Design: The study comprised 190 Chinese older adults who were recruited from local elderly daycare centers and residential homes in Hong Kong. The participants completed self-report measures on affect and functional outcome, two neuropsychological assessments on episodic, short-term, and working memory, and five salivary cortisol measures. Structural equation modeling was used to examine the direct and indirect effects of negative affect on functional outcome via diurnal cortisol pattern and memory.

Results: The cascading structural equation model provided an adequate fit to the observed data. The direct effects specified in the combined model were not significant. There was a significant and negative indirect effect from negative affect to functional outcome via diurnal cortisol slope (but not mean cortisol) and memory.

Conclusions: The current findings support a mediating role for cortisol such that elderly with greater negative affect showed flattened diurnal cortisol slopes which in turn led to poorer memory and functional outcome. Future longitudinal studies should elucidate the temporal ordering and causality of the relationship between the changes in stress and memory.

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D320

10:00 AM-11:00 AM

CHRONIC STRESS, REWARD-DRIVEN EATING, AND METABOLIC HEALTH AMONG CAREGIVERS

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Objective: Chronic stress and compulsive overeating (e.g., reward-driven eating) have been linked to worse metabolic outcomes, independent of weight. It is unknown how these trait measures work through greater exposure to daily stress to impact metabolic health. We aimed to unpack these associations in a sample of women with varying levels of chronic stress and reward-driven eating.

Methods: We compared chronically stressed mothers of a child with an autism spectrum disorder ('caregivers' 20–50 y; n=92) to age-, ethnicity-, and BMI-matched control mothers of neurotypical children ('controls'; n=91). At a baseline visit, we assessed BMI and metabolic health indices (HOMA-IR, WHR, visceral fat), trait-like reward drive (Reward-based Eating Drive, RED-9), and a weekly average of self-reported daily stress ('high stress day' [dichotomous, yes/no]) and 'stressor severity' (continuous, 0–15). We used PROCESS (v.2.16) for SPSS to evaluate two separate moderated mediation models, after covarying for BMI: (1) The association between chronic stress group (caregivers versus controls) and metabolic health, with daily stress as a mediator ('stress day' and 'stressor severity') and the RED-9 as a moderator; (2) The association between the RED-9 and metabolic health, with daily stress as a mediator, and chronic stress group (caregivers versus controls) as a moderator. We adjusted for baseline BMI in all analyses.

Results: Both chronic stress group and reward-driven eating were associated with insulin resistance but in different ways: Being a caregiver (high chronic stress) was positively associated with HOMA-IR, and greater daily stress ('stressor severity') partially mediated this association (indirect effect: $\beta=0.20$, $SE=0.09$). Reward-driven eating moderated this association: At higher levels of the RED-9, the RED-9 moderated both the indirect (conditional indirect effect: $\beta=0.28$, $SE=0.16$) and direct ($\beta=0.90$, $SE=0.27$, $p<.001$) paths. Reward-driven eating was positively associated with HOMA-IR through daily stressor severity (indirect effect: $\beta=0.08$, $SE=0.05$), but this association was not moderated by chronic stress (i.e., this association applied equally to caregivers and controls).

Discussion: Caregivers who endorse greater reward-driven eating have greater insulin resistance, and these effects operate through exposure to daily stress of greater severity. Malleable daily factors (e.g., types of stress exposures and responses, eating behaviors) may be ideal targets for interventions targeting improvements in metabolic health among high risk populations.

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D321

10:00 AM-11:00 AM

DEVELOPMENT AND VALIDATION OF A MEASURE OF STRESS-IS-CONTROLLABLE MINDSET: THE STRESS CONTROL MINDSET MEASURE (SCMM)

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Objective: Recent research has shown that stress mindsets, beliefs about the nature of stress itself as enhancing or debilitating, are influential in determining the adaptiveness of the stress response. Our research has found that holding a stress-is-controllable mindset, the belief that the impact of the stress response is malleable and can be enhancing, is associated with positive health and performance outcomes. The current research aimed to develop and validate the Stress Control Mindset Measure (SCMM) in three samples.

Methods: The SCMM contains 15 items which form four subscales. The study comprised three separate samples of undergraduate students aged 17 to 25. Sample 1 ($N = 218$) was recruited from a major Australian university and conducted in a research laboratory. Sample 2 ($N = 214$) was recruited from a major British university and conducted online. Sample 3 ($N = 88$) was independently collected online from the same Australian university as Sample 1. Participants from Sample 1 and 2 completed measures of stress-is-controllable mindset, stress mindset, perceived stress, psychological well-being, and stress appraisal. Participants from Sample 3 completed measures of stress-is-controllable mindset and demand control at two time points, four weeks apart.

Results: Confirmatory factor analyses indicated adequate model fit and a consistent four-factor structure across Sample 1 from Australia ($CFI=.933$, $TLI=.909$, $SRMR=.042$, $RMSEA=.088$) and Sample 2 from the UK ($CFI=.934$, $TLI=.911$, $SRMR=.045$, $RMSEA=.082$). The four factors were determined *a priori* and refer to stress-is-controllable mindset in the context of: performance and productivity, learning and growth, health and vitality, and getting the most from life. Sample 1 provided support for discriminant validity and convergent validity of the SCMM regarding conceptually-related constructs such as stress mindset, perceived stress, psychological well-being, amount of stress, and stress appraisal. Internal consistency was supported in all three samples, and in Sample 3 the SCMM exhibited adequate test-retest reliability ($r=.61$), and discriminant validity from demand control.

Conclusions: The Stress Control Mindset Measure (SCMM) is a valid and reliable measure with good psychometric properties. It is also related to salient health outcomes under stress. Findings provide evidence to support the utility of the instrument in future research understanding the effects of stress on health.

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D322

10:00 AM-11:00 AM

DEVELOPMENT OF A DAILY MEASURE OF SEXUAL MINORITY STRESSORS IN YOUNG LESBIAN WOMEN

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Lesbian women are at greater risk for a range of maladaptive mental and physical health outcomes as compared to their heterosexual peers, but the mechanisms by which these disparities occur remain unclear. One plausible explanation is sexual minority stressors (SMS), or the unique stressors (e.g., discrimination) sexual minorities experience due to their stigmatized and marginalized social status, contribute to negative health outcomes. Existing studies of SMS are primarily cross-sectional and use global, retrospective measures of SMS. The goal of the present study was to develop a brief daily measure of SMS for use in daily diary or ecological momentary assessment (EMA) studies. Existing retrospective measures of SMS were reviewed; redundant items and those inappropriate for a daily timeframe were removed, resulting in an initial pool of 28 items. Thirty-eight lesbian women (*M*_{age}=24.3, range: 19–30) completed a daily web-based survey including the SMS items for 12 days. Two response scales were tested; participants were randomized to receive a 3-point (for brevity) or 7-point (for precision) scale for the first 6 days and the other response scale for the remaining 6 days to counterbalance order. Histograms of responses for the 3-point and 7-point scales suggested the 7-point scale was optimal because it provided greater variability and participants endorsed medial ratings. To reduce scale length, item correlations were examined and 5 item clusters with intercorrelations >.6 were identified. A single item from each cluster was retained based on item variance, reducing the scale to 18 items. Then, using HLM, null models with each item as the outcome were conducted to examine level-1 and level-2 variances. With the goal of maximizing level-1 variability, items were sorted from largest to smallest level-1 variances and 8-, 10-, 12-, and 18-item scales were compared to identify the ideal number of items. The 8-item scale had the highest Cronbach's alpha (.85) and the smallest intraclass correlation (ICC; .13), suggesting these 8 items are optimal for capturing within-person variability in young lesbian women's daily SMS experiences. This study is the first to develop a reliable measure of SMS appropriate for daily use. As researchers are increasingly interested in using EMA methods, this 8-item measure can assess SMS in lesbian women's everyday lives. Such research is critical for understanding real-world sexual minority stressors and how these contribute to health disparities for lesbian women.

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D323

10:00 AM-11:00 AM

HAIR CORTISOL CONCENTRATION, METABOLIC HEALTH, AND THE CHRONIC STRESS RESPONSE NETWORK AMONG HIGH STRESS CAREGIVERS

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Objective: Animal models have shown that chronic stress increases cortisol levels, and such increases in cortisol predict overeating of highly palatable food. Such overeating leads to increased abdominal fat and lower cortisol reactivity. Human models have yet to unpack associations between chronic mental stress, cumulative cortisol levels, stress-induced eating, and change in body weight and metabolic health over time.

Methods: Mothers (20–50 y) of children with an autism spectrum disorder (ASD; caregivers, higher stress) were compared to age-, ethnicity-, and BMI-matched mothers of neurotypical children (controls, lower stress). At a baseline and 24-month assessment, we collected measures of hair cortisol (cumulative cortisol), metabolic health (abdominal fat, HOMA-IR, and lipid profile), stress eating behavior, and psychological functioning. We conducted a series of ANCOVAs comparing groups on these outcomes, adjusting for baseline BMI and metabolic/psychological functioning.

Results: Caregivers had significantly lower cumulative cortisol at baseline ($p \leq .03$) and 2 years later ($p \leq .007$), regardless of adjusting for baseline BMI. From baseline to 24-months caregivers (relative to controls) evidenced increased LDL-cholesterol ($p = .03$), abdominal fat ($pp = .08$), and consumption of junk food ($p = .03$), and this pattern of results and significance remained after adjusting for initial BMI.

Discussion: Caregivers, relative to controls, evidenced lower cumulative cortisol levels over the two years, consistent with studies among adults with clinically significant anxiety who demonstrate hypocortisolemia. Caregivers had worse metabolic health at baseline but still showed worsening metabolic health and increases in stress-related eating over the two years. People under chronic stress may require tailored interventions focusing on emotion regulation and control over eating to prevent early onset of metabolic and cardiovascular disease.

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D324

10:00 AM-11:00 AM

IDENTIFYING PREDICTORS OF PERCEIVED STRESS IN ADULT PATIENTS WITH ASTHMA

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Introduction: Asthma is a chronic respiratory illness that has become a major public health concern due to its rapid increase in prevalence and increasing economic burden. Perceived stress has been associated with increases in asthma incidence and asthma hospitalizations along with poor self-management of asthma (Rod et al., 2012). Additionally, patients with high perceived stress are less likely to adhere to a prescribed medication regimen (Rand et al., 2012). Social problem-solving, or the way individuals work to cope with everyday problems (D'Zurilla, 2002), has been shown to be related to perceived stress and the management of various chronic conditions.

Methods: The current study examined adult asthma patients ($N = 104$) from allergy and pulmonary practices. Participants completed self-report questionnaires regarding medication adherence, asthma control, perceived control of asthma, perceived stress and social problem-solving abilities. Additional patient information was gathered from medical and pharmacy records. A hierarchical regression analysis was conducted to examine which of the primary variables (medication adherence, objective asthma control, perceived control of asthma, and social problem-solving) are predictive of perceived stress among adult patients with asthma.

Results: Results indicated that lower self-report of medication adherence ($F(3, 94) = 6.581, p < .01$) and lower perceived control of asthma ($F(5, 92) = 6.970, p < .001$) were predictive of higher perceived stress, when controlling for race/ethnicity and income. In addition, poorer social problem-solving abilities were predictive of higher perceived stress ($F(6, 91) = 12.604, p < .001$) when controlling for demographics and the other primary variables.

Conclusion: Findings indicate that poorer medication adherence, lower perceived control of asthma, and poorer social problem-solving abilities all influence perceived stress among adult asthma patients. These findings help identify which individuals are at greatest risk for negative psychosocial adjustment to asthma and therefore poorer medication management and health outcomes. Psychoeducational and psychosocial interventions should be adapted for these individuals to help increase social problem-solving strategies, medication adherence, and perceived control to decrease stress and provide the support and skills that this population needs.

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D325

10:00 AM-11:00 AM

NARCISSISM AND HEALTH-RELATED STRESS-REACTIVITY

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Narcissism is a complex aspect of personality characterized by a grandiose sense of self that is vulnerable to disconfirmation. Despite an extensive history in clinical literature, narcissism has only recently gained greater interest in health research and has shown links to a diverse range of generally negative health outcomes. In order to better understand how narcissism may impact health, it is important to identify biobehavioral processes that constitute plausible mechanisms to link narcissism to health outcomes. Stress-reactivity (i.e., changes in psychological, biological, and behavioral processes that arise in response to perceived threats) has been associated with a variety of health outcomes (e.g., impaired immune function, obesity, and the onset and progression of cardiovascular disease). Clinical observations (e.g., case studies) have noted that individuals high in narcissism exhibit a variety of maladaptive reactions when grandiosity is threatened (e.g., heightened aggression, avoidance of social situations). Thus, it is plausible that narcissism is associated with maladaptive stress-reactivity more broadly. We applied systematic review methodology to identify studies using within-person methods to examine associations between narcissism and stress-reactivity. The results of the studies identified indicate that narcissism is associated with potentially maladaptive stress-reactivity (e.g., heightened negative affect, exaggerated neural, cardiovascular, and cortisol responses), and a few potentially adaptive stress responses (e.g., increases in self-esteem and physical activity). Furthermore, clinically relevant dimensions of narcissism (i.e., grandiosity and vulnerability) may differentially influence stress-reactivity. For example, grandiosity has been associated with potentially adaptive and maladaptive stress responses, whereas vulnerability appears less consistently related but primarily associated with maladaptive responses. Finally, moderators, such as contextual factors (e.g., type of stressor, presence of observers, or characteristics of interaction partners) and additional individual differences (e.g., attachment patterns, stability of grandiosity), may influence associations between narcissism and stress-reactivity. Overall, the findings from this review provide initial evidence that stress-reactivity is a plausible mechanism through which narcissism may impact long-term health.

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D326

10:00 AM-11:00 AM

PATHWAYS TO WELL-BEING: MINDFULNESS IN THE STRESS-COPING PROCESS

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Rooted in eastern philosophy, mindfulness has garnered significant attention in the U.S. A recent 2007 National Institute of Health report showed that Americans spent about \$4 billion on mindfulness-based treatments in 2009 (as referenced in Pickert, 2014). Given the significant evidence highlighting the psychological benefits of mindfulness, the current study seeks to contribute to research on mechanisms of change. Grounded in stress and coping theory (e.g., Berry, Kim, Minde, & Mok, 1987; Lazarus & Folkman, 1984), the current study examines how mindfulness influences perceived stress, coping strategies (i.e., emotion- and problem-focused coping strategies), and psychological well-being. It was hypothesized that: (1) daily experiences of mindfulness would predict lower levels of perceived stress during a stressful event, more adaptive coping strategies, and better psychological well-being; and (2) less perceived stress and adaptive coping would account for the relationship between mindfulness and psychological well-being.

Thirty Chinese international students from a large mid-Western university completed an online survey on mindfulness and psychological well-being, and then engaged in a two-week daily diary about their experiences of stress, coping and daily affect. Results using multilevel structural equation modeling (MSEM) found that: (1) mindfulness predicted less perceived stress, (2) mindfulness predicted less emotional suppression and greater problem-solving coping, and (3) less stress and adaptive coping mediated the relationship between mindfulness and psychological well-being. Results contribute to the growing evidence that mindfulness can help individuals cope with stress through perceiving less stress and using adaptive coping strategies during duress.

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D327

10:00 AM-11:00 AM

PROJECT OM: TESTING ONLINE MINDFULNESS-BASED STRESS REDUCTION PROGRAM TO REDUCE STRESS AMONG LESBIANS IN APPALACHIA

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Background: Lesbians residing in Appalachia may face greater stress resulting from geographic isolation and economic strain, as well as from systemic minority stressors (including stigma, discrimination, and social isolation) that are reinforced by discriminatory state and regional policies. Stress among lesbians residing in Appalachia is 40% higher than norms and could significantly increase lesbian's risk for stress-related diseases. Behavioral stress-reduction interventions are one possible individual-level solution to reduce stress and related health risks in the absence of comprehensive policy reform. Mindfulness-based stress reduction programs are proven to reduce stress; however, transportation, cost, and outing oneself are all barriers to in-person participation reported by lesbians in Appalachia. Innovative, accessible solutions are needed. Online mindfulness-based stress reduction (OMBSR) programs could be a solution. OMBSR has never been tested with lesbians residing in Appalachia and there is a complete lack of evidence concerning how OMBSR relates to stress among this group. We addressed this gap by testing the feasibility of an 8-week, online, mindfulness-based stress reduction (OMBSR) program to reduce perceived and minority stress among lesbians in Appalachia.

Methods: Lesbians residing in Appalachia were recruited using convenience and snowball sampling techniques, into a one-armed feasibility test of an 8-week, online, mindfulness-based stress reduction program. Perceived and minority stressors, and salivary cortisol were assessed at baseline, post-OMBSR, and 4-weeks after completing OMBSR. Semi-structured interviews were conducted with participants at weeks 4 and 8. Intent-to-treat analyses assessed change in stress from baseline to post-OMBSR.

Results: 16 lesbians enrolled in and 11 completed the OMBSR. Perceived stress was reduced by 15% from pre- ($M = 24.06$) to post- OMBSR ($M = 20.44$) ($t = 2.77$, $p = .01$), and was maintained at 12-week follow-up ($M = 20.88$; $t = 2.31$, $p = .04$). Distress from minority stressors declined 14% from pre- to post- OMBSR ($t = 3.12$, $p = .0007$) and was maintained at 12-week follow-up ($t = 2.47$, $p = .03$).

Conclusion: In the absence of comprehensive, multi-level anti-discrimination policies, individual-level behavioral interventions such as OMBSR may be one way to reduce stress and risk for stress-related diseases among lesbians. OMBSR appeared to be a feasible option for reducing stress among lesbians in Appalachia.

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10:00 AM-11:00 AM

STANDING ENHANCES VASOVAGAL SYMPTOMS ELICITED BY STIMULI ASSOCIATED WITH BLOOD BUT NOT OTHER EMOTIONAL STRESSORS

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BACKGROUND: Various stimuli (orthostatic stress, blood-related stimuli, fear, haemorrhage, etc.) are capable of triggering a vasovagal response (VVR). It remains unclear to what extent these represent identical or just similar physiological reactions. This study hypothesized that VVR are based on the prevention of excessive blood loss and thus triggered by stimuli that suggest as well as produce actual loss. As a result, the effects of certain emotional blood-related stressors should interact with certain postural stressors.

METHODS: 48 healthy young adults completed a questionnaire assessing medical fears (Medical Fears Survey –MFS-SF; Olatunji et al., 2012) and watched five 5-minute stimulus videos with different emotional content. All participants watched the Neutral video followed by 4 subsequent videos presented in counter-balanced orders: a Blood/Injury video depicting an open heart surgery, and three additional videos (Medical, Chase/Fear, and Loss/Sadness). Participants were randomly assigned to watch the videos either standing or sitting in an arm-chair. Vasovagal symptoms, blood pressure (BP), and heart rate (HR) were assessed during each video.

RESULTS: The primary analyses were 2 Posture (sitting/standing) x 4 Video (Loss/Chase/Medical/Blood-Injury) x Medical Fear (treated as a continuous measure) repeated-measure general linear models (GLMs) with sex and Neutral video value as covariates. As predicted, there was a significant Posture x Video interaction, $F(3,129) = 3.53$, $p = .040$, $\eta_p^2 = .076$, due to a specific enhancement of symptoms during the Blood/Injury video by standing. This effect was moderated by fearfulness leading to a significant Posture x Video X Medical Fear interaction, $F(3,129) = 5.30$, $p = .010$, $\eta_p^2 = .11$. Standing significantly increased symptoms experienced by more fearful participants during Blood/Injury but not other videos. This pattern was corroborated by SBP and HR with significant Posture x Film interaction effects, $F(3,117) = 2.84$, $p = .048$, $\eta_p^2 = .068$, and $F(3,117) = 4.20$, $p = .011$, $\eta_p^2 = .097$, respectively. As expected, this was due to a notable decreases among those who watched the surgery film while standing.

CONCLUSION: Blood-related fears play a key role in eliciting VVR and orthostatic stress enhances this effect. These findings provide support for the theory that VVR may have developed as a means to facilitate the survival of animals who were injured and experiencing significant blood loss.

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D329

10:00 AM-11:00 AM

THE ROLE OF TRAIT AND MOMENTARY PERSEVERATIVE COGNITION ON NEGATIVE AFFECT IN EVERYDAY LIFE

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Perseverative cognition (PC), repetitive or sustained thoughts about stressful events, can be triggered by stress. PC, at both trait and momentary levels, is associated with decrements in affect and prolonged physiological responses that can have negative health consequences. Prior work has largely examined trait and momentary PC separately, leaving synergistic effects unexplored. In response to everyday stress we investigated: 1) momentary PC, 2) the role of trait PC on momentary PC responses, and 3) the interaction of trait and momentary PC on negative affect (NA). A diverse sample of adults (N=159; 51% women; age M=50, SD=17), completed baseline measures, including trait PC (with intrusion and suppression subscales). Participants completed three weeks of ecological momentary assessment (EMA); each report (5 times each day) included whether a stressor had occurred, how severe/unpleasant the stressor was when it happened, how much they thought about the stressor, how much they tried to stop thinking about the stressor, and their current affect. More momentary intrusive thoughts ($b=.601, p<.001$) and suppression attempts ($b=.209, p<.001$) were reported after more severe stressors. Individuals higher in trait intrusion reported more momentary intrusive thoughts following more severe stressors ($b=.136, p=.015$), and those higher in trait suppression reported more momentary suppression attempts in response to more severe stressors ($b=.140, p=.034$). More NA was reported following more severe stressors ($b=.179, p<.001$) and after stressors that were accompanied by more intrusive thoughts ($b=.304, p<.001$). A trait by momentary suppression interaction revealed that, for individuals lower in trait suppression, momentary suppression attempts in response to stressors were associated with more NA; in contrast, for individuals higher in trait suppression, momentary suppression attempts in response to stressors were associated with less NA. In sum, momentary PC may be evoked by more severe stressors in everyday life, and this association appears stronger in those with higher trait PC. The results also highlight a nuanced perspective on suppression in daily life; namely, that a match between trait and momentary response styles may be adaptive (in the moment) by reducing the amount of NA experienced in response to stressors. This research provides some insight into how everyday stress and person-situation fit in response styles could influence health through effects on NA.

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TRAIT MINDFULNESS AND REACTIONS TO STRESS IN YOUNG ADULTS

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Introduction: Exaggerated cardiovascular reactivity and delayed cardiovascular recovery following stress have been linked to hypertension and other risk factors for cardiovascular diseases. Mindfulness meditation interventions have been examined as a potential means of stress reduction and have been linked to cardiovascular benefits. However, it is unknown if trait mindfulness is also associated with healthier cardiovascular stress responses. In the present study, it was hypothesized that greater trait mindfulness would predict lower perceived stress levels, attenuated cardiovascular reactivity, and faster cardiovascular recovery following a laboratory stress task.

Methods: Participants were 99 college students, aged 19.44 ($SD = 1.44$), from a midwestern university. Trait mindfulness was assessed using the Five Facet Mindfulness Questionnaire (FFMQ) and stress was assessed using the Perceived Stress Scale (PSS). The laboratory stress protocol included a 10 min baseline, 5 min speeded arithmetic stress task, and 14 min recovery period. Blood pressure (BP) was measured during the protocol using an automated oscillometric BP monitor. Hierarchical regressions were used to analyze whether trait mindfulness predicted PSS scores, BP reactivity, and BP recovery after controlling for sex.

Results: The Acting with Awareness facet and the Non-Judgment facet of the FFMQ negatively predicted perceived stress ($\beta = -.310, p = .002$; $\beta = -.342, p < .001$). A similar trend was observed for the Non-Reactivity facet ($\beta = -.162, p = .080$). A composite mindfulness score also negatively predicted perceived stress ($\beta = -.590, p < .001$). Mindfulness did not predict systolic or diastolic BP during baseline. The Acting with Awareness facet positively predicted diastolic BP reactivity ($\beta = .276, p = .025$), though no other effects for reactivity were found. Mindfulness scores did not predict systolic or diastolic BP recovery.

Discussion: As hypothesized, trait mindfulness, and some facets, predicted lower levels of perceived stress. However, trait mindfulness generally did not predict baseline BP levels, stress reactivity, or recovery. Contrary to the hypothesis, the Acting with Awareness facet predicted stronger diastolic BP reactivity. Greater awareness during the stress task may have enhanced the experience of stress and contributed to diastolic BP elevations. Trait mindfulness predicted perceived stress, but not changes in blood pressure. Thus, whereas trait mindfulness may affect the perception of stress, inclusion of mindfulness in comprehensive interventions may be necessary to produce physiological effects.

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