



**American Academy of Health Behavior**  
**Poster Session**  
**Monday, March 20, 2017**  
**6:00 – 7:30 PM**

**Board 1**

**The Future of Health Behavior Research: A Modified Delphi Study**

Maddock JE, Barry AE, Colwell B, Umstadd Meyer MR

Purpose: Assess health behavior researchers' opinions on significant new foci emerging over the next 20 years, disciplines that can serve as important partners, and adjustments needed for doctoral training programs to prepare researchers for emerging trends. Methods: A two-wave modified Delphi procedure was employed to assess opinions and perspectives of current health behaviors researchers. In Wave I, respondents generated up to three ideas for each of four prompts. In Wave II, participants rated the importance of each of the responses generated in the first wave. Results: 39 and 48 people completed Waves 1 & 2, respectively. Wave 1 yielded 46 respondent-generated items for the new foci, and 28 different partner disciplines. Respondents identified 47 topics not currently covered in health behavior Ph.D. programs, and 8 that should be removed from current Ph.D. programs. Seven new foci were endorsed by 80% or more of the respondents, including studying cultures of illness and health, as well as better operationalization of social-ecological models. Seven disciplines were seen as essential partners by at least two-thirds of the respondents, including public health, biostatistics, and public policy. Five additions to doctoral programs were endorsed by 80% or more of the respondents, including stronger research skills, advanced statistical methods, writing and evaluation. Years since Ph.D. was negatively correlated with a number of suggested new foci, disciplines to partner with, and areas that should be added to health behavior Ph.D. programs. Discussion: There was a high level of consensus about potential new foci in the field, focusing on population health, stronger scientific techniques, and more research training. There was less consensus on related disciplines' potential, based on the respondents' type of work and field. Overall, results have potential to shape doctoral training and preparation of future health behavior researchers.

**Board 2**

**Tailored Training: Impacting Health Behaviors and Outcomes Through the Use of a Simulation Site**

Walsh-Buhi ML, Schoonhoven Scott D

Child abuse is a public health crisis. A multitude of studies indicate childhood trauma, such as abuse and neglect, cause lasting impacts on physical, emotional and behavioral health. Research shows a high percentage of youth who spend time in foster care experience poor physical health outcomes, unemployment, early and unplanned pregnancy, substance abuse and homelessness. From a social determinants perspective, these health outcomes negatively impact not only the individual but the broader community. The Public Child Welfare Training Academy uses innovative multi-modality training and workforce development strategies to educate child welfare workers and leaders. Our goal is to ensure that child welfare practitioners properly identify, assess and treat child abuse and neglect in order to positively impact health outcomes. One such training modality are simulations, still new in child welfare but have been used successfully in the medical field and by the military. Using a fully operational apartment and actors, learners practice new skills in a safe, realistic environment, apply critical thinking to practice, and participate in a structured process of group learning. This training modality promotes skill development and best practice by moving beyond basic lecture-based training and providing an opportunity for staff to integrate newly acquired knowledge into daily practice. Our presentation will review the design, implementation, and evaluation of our simulation site, the benefits

of simulation training, and the lessons learned. Based on qualitative and quantitative data collected from 2015-2016, we will review how the use of simulation in child welfare training reduces the risk of negative outcomes for youth and families involved with child welfare agencies and advances public and behavioral health. Simulations are one method that will lead to improved practice within the child welfare workforce, resulting in early identification, prevention, reduction and cessation of parental behaviors that end in abuse and neglect of children.

### **Board 3**

#### **Evaluating Reliability of Amazon Mechanical Turk for Processing Receipt Data**

Lu W, Guttentag A, Tancelosky T, Hong G, Kirchner T

Background: Food and beverage purchase receipts often include time-stamped location information, which when associated with product purchase details could provide a highly useful behavioral measurement tool. Unfortunately, extraction of data from receipts is often costly, labor-intensive, and time-consuming. Amazon Mechanical Turk (MTurk) is a crowdsourcing framework that allows online workers, i.e., turkers, to complete tasks in very short time. Purpose: To assess the feasibility and reliability of processing receipt data via MTurk. Methods: Receipts (N=196) were randomly selected from a pool of receipts collected by researchers at New York University. For each receipt, turkers were asked to 1) identify the restaurant name, 2) indicate whether beverage was listed and, if yes, 3) categorize the beverage as cold or hot. Inter-rater agreement for specific questions and agreement between Turk majority vote and the “gold standard” values as validated in the manually entered data set were calculated. Results: For the 196 receipts completed by 5 turkers, the perfect agreement rate (i.e., percent of receipts with all turkers agreeing) and almost-perfect agreement rate (i.e., percent of receipts with just one turker disagreeing) were 90.8% and 89.2% for restaurant name (e.g., Berger King, McDonald’s), 75.5% and 23.0% for beverage inclusion, 69.2% and 23.1% for hot beverage (e.g., hot coffee, hot tea), and 51.0% and 36.0% for cold beverage (e.g., coke, bottled water). After 5 turkers completed tasks, the majority votes’ agreement rate with the gold data was 100.0% for “restaurant name” and 99.5% for “beverage inclusion”. Conclusion: Our findings indicated that inter-rater agreement was reasonably high for questions at different difficulty levels, e.g., single vs. binary vs. multiple-choice items. Compared with traditional methods for processing receipt data, MTurk can produce good-quality data in a lower-cost, more time-efficient manner. Future studies with more complicated questions are warranted to further evaluate MTurk as a promising tool for processing receipt data.

### **Board 4**

#### **Role of Type D Personality Towards Health Behaviors among International Students in the United States**

Bhochhibhoya AK, Branscum PW

Background: It is well established that international students have distinctive types of social and educational experiences and the higher level of distress compare to indigenous students. Type D personality is a characteristic of one’s mental health that describes the degree of distress an individual experiences, and is a joint tendency towards negative affectivity (NA) and social inhibition (SI). Purpose: The purpose of this study is to explore the role of Type D personality towards health behaviors among international students in the US. Methods: A sample of 328 (females=180, males=148) international students participated in this study. An independent t-tests was utilized to compare mean differences among groups (Type D/NA vs Non-type D/NA and Type D/SI vs Non-type D/SI) categorized based upon cut-off points suggested for the Type D scale. Results: Most participants were categorized as Type D/NA (n=168, 51.2%) and Type D/SI (n=188, 57.3%). Also vigorous physical activity (p=.028, d=0.24), moderate physical activity (p=.002, d=0.33), and total physical activity Met-

minutes/week ( $p=.001$ ,  $d=0.37$ ) were significantly higher for Non-type D/NA groups compare to Type D/NA. Similarly, stress ( $p<.001$ ,  $d=1.29$ ), smoking ( $p=.008$ ,  $d=0.41$ ), and alcohol ( $p=0.23$ ,  $d=0.25$ ) was also higher for Type D/NA groups. Similarly, vigorous physical activity ( $p=.0078$ ,  $d=0.30$ ), moderate physical activity ( $p=0.011$ ,  $d=0.28$ ), total physical activity Met-minutes/week ( $p=.001$ ,  $d=0.37$ ), and stress ( $p<.001$ ,  $d=0.68$ ) were all significantly higher for Type D/SI compare to Non-type D/SI groups. However, smoking ( $p=0.067$ ) and alcohol ( $p=.847$ ) were not found to be significantly different between Type D/SI and Non-type D/SI. Conclusions: Findings from this study could provide a basis for research aimed at determining the relationship of Type D personality with other risky health behavior among international students and the immigrant population at large. Implications for this study will be discussed.

### **Board 5**

#### **Data Mining of Web-Based Documents on Social Networking Sites that Included Suicide-Related Words among Korean Adolescents**

Seo DC, Song J, Song TM

Purpose: To investigate online search activity of suicide-related words in South Korean adolescents through data mining of social media websites as the suicide rate in South Korea is one of the highest in the world. Methods: Out of more than 2.35 billion posts for 2 years from January 1, 2011 to December 31, 2012 on 163 social media websites in South Korea, 99,693 suicide-related documents were retrieved by Crawler and analyzed using text mining and opinion mining. These data were further combined with monthly employment rate, monthly rental prices index, monthly youth suicide rate, and monthly number of reported bully victims to fit multilevel models as well as structural equation models. Results: The link from grade pressure to suicide risk showed the largest standardized path coefficient ( $\beta=0.357$ ,  $p<.001$ ) in structural models and a significant random effect ( $p<.01$ ) in multilevel models. Depression was a partial mediator between suicide risk and grade pressure, low body image, victims of bullying, and concerns about disease. The largest total effect was observed in the grade pressure to depression to suicide risk. The multilevel models indicate about 27% of the variance in the daily suicide-related word search activity is explained by month-to-month variations. A lower employment rate, a higher rental prices index, and more bullying were associated with an increased suicide-related word search activity. Conclusions: Academic pressure appears to be the biggest contributor to Korean adolescents' suicide risk. Real-time suicide-related word search activity monitoring and response system needs to be developed.

### **Board 6**

#### **Fly Ash Presence in Homes and Children's Memory and Fine Motor Skill Test Performance**

Tompkins LK, Sears LL, Lorenz DJ, Hanchette CL, Polivka BJ, Brock GN, Zierold KM

Background: Fly ash particles, spherical particles  $\leq 10\mu\text{m}$  in diameter formed during coal combustion, frequently contain metals and are stored in open ponds or landfills near residential areas. Children living near these storage sites are at increased risk for fly ash exposure due to their behaviors, size, and developing defense mechanisms; however, there have been few studies assessing fly ash exposure and children's health. Study Aim: To assess if children who have fly ash in their home perform poorer on neurobehavioral tests of memory and fine motor skills compared to children with no fly ash in their home. Methods: Children aged 6-14 years living within ten miles of coal ash storage sites are being recruited to participate in a cross-sectional study. Lift tape and air samples from participants' homes are analyzed using Scanning Electron Microscopy and Energy-Dispersive X-Ray Spectroscopy to determine the presence of fly ash. Participants complete a battery of neurobehavioral tests focused on memory and fine motor skills including the Beery VMI, Purdue Pegboard, Object Memory, and the Behavioral Assessment and Research System Simple Digit Span and Finger Tapping

tests. Fly ash data are available for 49 participants; however, the sample continues to increase as the study progresses. Results: Fly ash was confirmed in 42.9% of homes. The odds of abnormal or low performance on seven neurobehavioral tests were higher among those with fly ash in their homes, even after adjustment for covariates such as age, sex, and other environmental exposures (AOR range = 1.150-2.134). Conclusion: The results of this on-going study were impacted by the current small sample size. Several patterns between fly ash presence in homes and memory and fine motor skill test performance were identified. These relationships should be further evaluated as the study's sample size continues to grow and additional fly ash data become available.

### **Board 7**

#### **A Systematic Review of the Paternal Influence on Child Physical Activity**

McClendon ME, Umstattd Meyer MR, Bridges CN

Parental roles in child physical activity (PA) have been well documented, specifically with a large maternal focus. Disproportionate efforts have examined paternal roles in child PA, with current efforts excluding PA environment, lifestyle activities, and father and child perceptions. Purpose: The purpose of this study was to conduct a systematic literature review of paternal roles in child PA to describe the multifaceted role that fathers play. Methods: Systematic searches using PubMed and Web of Science were conducted using the search terms 'paternal influence on physical activity'; 'paternal influence and physical activity'; 'father's influence and physical activity'; and 'parental influence and physical activity' without a time restriction. Inclusion criteria comprised individual or independent examination of the paternal role in child PA, child PA as an outcome, and availability of the article in English. Results: A total of 1619 potentially relevant articles were generated from these searches. After irrelevant articles (n=1456) and subsequently duplicates (n=80) were excluded, a total of 83 articles met inclusion criteria. Only quasi-experimental studies (n=5) and non-intervention studies (n=78) were identified that met inclusion criteria; no randomized control trials were identified. Overall, paternal influence on child PA was mixed with positive and neutral associations that involved many different types of PA including housework, exercise, low-intensity PA, leisure time PA, moderate-to-vigorous PA, and physically active transport. Similarly, paternal associations between genders were also diverse with paternal encouragement, sports engagement, and moderate-to-vigorous PA being associated with daughters' PA; and paternal perceptions, child perceptions of paternal support, and paternal encouragement being associated with sons' PA. Conclusions: Fathers play a diverse role in their child's PA. Researchers should continue to study the multifaceted role of the father to enhance synthesis. This review depicts inconsistent findings showing a need for supplementary research to determine the paternal role in child PA.

### **Board 8**

#### **Systematic Review of Primary Prevention Obesity Interventions Targeting Youth with Intellectual Disabilities**

Conrad E, Knowlden A

Purpose: The purpose of this review is to determine the effectiveness of primary prevention obesity interventions for youth with intellectual disabilities (ID). Methods: A systematic review of published studies following PRISMA guidelines was conducted to determine the effectiveness of interventions as an approach for reducing obesity in youth with IDs. Inclusion criteria were interventions targeting youth with ID, published in the past 10 years, using any quantitative design, employing a lifestyle intervention (weight loss, weight management, diet, physical activity) as the primary treatment variable, targeting obesity indicators (BMI or body fat) in participants between 10 and 24. Interventions satisfying the inclusion criteria were subjected to a methodological quality critique. Results: The search strategy returned 99 hits from the MEDLINE (n = 16), CINAHL (n = 17), ERIC (n = 14) and PSYCInfo (n = 52)

databases. A total of 13 studies met the inclusion criteria and were included in the systematic review. Of the 13 interventions, 7 (54%) suggested improvement in at least one primary outcome of interest. Interventions utilized pre-post design (n = 7), with RCT (n = 4) and quasi (n = 3) protocols utilized less frequently. For the majority of interventions, outcome evaluation occurred from < 2 months (n =5), 6 months (n = 2), 9 months (n = 1), and 24 months (n = 1). The primary setting for the interventions were schools (n = 6), an afterschool program (n = 1), clinic or group home (n = 2), home-based (n = 1), community (n = 1), and unspecified (n = 2). Conclusions: Obesity among youth with intellectual disabilities is a significant health issue, yet few health behavior interventions have prioritized this population. A majority of these trials relied on small sample sizes and lacked health behavior theory integration.

### **Board 9**

#### **Perceived Severity of Sitting Too Much and Value Beliefs of Standing at Work: Understanding Sedentary Behavior of American Working Adults**

McClendon ME, Umstattd Meyer MR, Wu C, Walsh SM, Bridges C, Miller A, Nelon J, Morehead TP, Bernhart JA

Sedentary behavior has been linked with negative health outcomes across the lifespan, with workplaces consistently contributing to high levels of sedentary time for the majority of American adults. Although workplace environmental interventions show promise in decreasing sedentary work time, little research has aimed to understand perceptions of working adults. The purpose of this study was to describe perceived severity of sitting too much and value beliefs and barriers to standing more at work among sedentary working adults. Employees with sedentary occupation types ( $\geq 6$  hours/day at a desk; n=99) completed surveys assessing perceived severity of sitting and value beliefs and barriers to standing at work. Actigraph accelerometers were used to measure sedentary behavior. Participants (80% female, 83% white, mean age=41.3[SD=11.9], mean BMI=28.0[SD=7.0]) spent a mean of 679.5 minutes/day(SD=71.8) being sedentary. Most participants believed sitting too much could increase risk for type 2 diabetes (74.5%), heart disease (90.8%), obesity (96.9%), lower back pain (77.5%), and canceled benefits of physical activity (60.2%). However, only 27.6% believed sitting too much could cause them to die, and most were undecided on whether it contributes to infertility (71.4%). The majority viewed standing at their desk during a workday as beneficial (88.8%) and wise (86.7%), although only 50% thought it pleasant or enjoyable. Most disagreed when asked if using a standing desk would be too tiring (67.4%), too painful (75.6%), or if their boss would not be understanding (85.7%); 35.7% reported insufficient departmental resources to get a standing desk. These results not only provide an overview of working adults' current sedentary time, but also offer valuable information for future interventions. Research and interventions should further examine and address negative consequences of sitting too much, help employees demystify negative beliefs of standing at work, and provide resources to facilitate intermittent standing at work.

### **Board 10**

#### **Use of Appreciative Inquiry to Engage Parents as Co-Designers of a Weight Management Intervention for Adolescents**

Moore SM, Borawski EA, Andrisin S, Primm T, Killion CM, Olayinka O

Background: Focus groups are often used to involve families as co-designers of weight-management interventions. Focus groups, however, are seldom designed to elicit families' strengths and positive experiences. The purpose of this study was to describe the use of the Appreciative Inquiry process in the conduct of focus groups to engage families in the design of a weight management intervention for adolescents. Methods: A convenience sample of 44 parents (84% female; 82% minority) of adolescent children with a BMI >85th percentile who were in the 6th-8th grade in a large urban school participated

in focus groups designed to elicit family positive experiences and strengths regarding healthy living. A structured set of questions based on the Appreciative Inquiry process was used in the focus groups. Analyses consisted of the constant comparative method to generate themes. Results: Parent positive perceptions regarding their family's healthy living habits were reflected in five themes: (1) Having healthy children is a joy; (2) Becoming healthy is a process; (3) Engaging in healthy habits is a family affair; (4) Good health habits can be achieved despite obstacles; and (5) School, community, and social factors contribute to their family's health habits. Parents generated ideas to improve their families' health. Conclusions: Focus groups based on the Appreciative Inquiry process were found to be a useful approach to discover features that are important to low-income, urban-living parents to include in an adolescent weight management program. Recommendations for designing and conducting focus groups based on the Appreciative Inquiry process are provided.

### **Board 11**

#### **Skin Cancer Risk and Other Health Risk Behaviors: A Scoping Review**

Merten JW, King Jessica

Purpose. To present results of a scoping review focused on skin cancer risk behaviors and other related health risk behaviors. Skin cancer is highly preventable, yet it is the most common form of cancer in the United States with melanoma rates increasing. Limited research has been conducted examining the relationship between skin cancer prevention behaviors and other health risks, yet multiple behavioral health risk interventions have shown great promise for health promotion and reduced health care costs. Methods. Online databases were searched for research articles on skin cancer risk behaviors and related health risk behaviors. Results. Thirty-seven articles met inclusion criteria examining skin cancer behaviors including risk, sun protection behaviors, sunburn, and indoor tanning. The majority of existing studies focused on the relationship between skin cancer prevention behaviors and physical activity, body mass index, smoking, and alcohol abuse. Adults were the primary population of interest with some studies of adolescents. Conclusions. Poor skin cancer prevention behaviors were associated with alcohol use, marijuana use, and smoking among adolescents and adults. Studies on body mass index and physical activity had mixed relationships with skin cancer prevention behaviors and warrant further investigation. Indoor tanning was associated with other risky behaviors but other skin cancer prevention behaviors were not studied.

### **Board 12**

#### **When Helping Helps: Exploring Health Benefits of Cancer Survivors Participating in For-Cause Physical Activity Events**

Umstaddt Meyer MR, Meyer AR, Wu C, Bridges C, McClendon ME

Over 13.5 million Americans live with cancer and 5-year survival rates have risen to 66.5%. Evidence supports important health benefits of regular physical activity (PA) for cancer survivors, including increased strength and quality of life, and reduced fatigue, recurrence and mortality. However, PA participation among cancer survivors remains low. Cancer organizations, like The LIVESTRONG Foundation, provide various resources and support for cancer survivors, including emotional, instrumental, informational, and appraisal support. One way cancer organizations support the cancer community is through hosting for-cause PA events, inviting everyone's (including cancer survivors') participation to "help"/support those living with cancer. The concept of "helping others" has been related with wellbeing and multiple health behaviors for those helping. However, the role of "helping others" has not been examined in the context of being physically active to "help others" or its relationship with overall PA among those helping. Therefore, we developed a path model to examine relationships between cancer survivors' (1) desire to help others with cancer, (2) PA participation in LIVESTRONG to help others with cancer, (3) regular PA engagement, and (4) quality of life. In 2010, 3257 cancer

survivors (62% female, mean age=48.2[SD=12.7]) responded to an online survey sent to LIVESTRONG participants. Structural equation modeling was used to test our hypothesized path model (Mplus 7.11), which fit the data well (RMSEA=0.08, CFI=0.94, SRMR=0.02). Controlling for gender, income, and survivorship length, desire to help was related with LIVESTRONG PA participation ( $\beta=.06$ ,  $p<.0001$ ), which was related with regular PA ( $\beta=.11$ ,  $p<.0001$ ), and regular PA was related with quality of life ( $\beta=.14$ ,  $p<.0001$ ). Results suggest that cancer survivors can benefit from participating in for-cause PA events, including more regular PA. Researchers need to further investigate the role of “helping others”, and cancer organizations should continue encouraging cancer survivors to “help others” by participating in PA events.

### **Board 13**

#### **Physical Activity Interventions for Pregnant and Postpartum Minority Women: A Systematic Literature Review**

Bridges CN, Umstatted Meyer MR, Cunningham E, McClendon ME

Minority women are more likely to be overweight before pregnancy and less likely to meet physical activity (PA) guidelines during gestation and postpartum than non-Hispanic white women. PA can reduce gestational weight gain, adverse effects experienced during pregnancy, and a child’s obesity risk. Purpose: The purpose of this study was to conduct a systematic literature review of and describe implementation, effectiveness, and outcomes of PA interventions for pregnant and postpartum, minority women. Methods: A systematic literature search was conducted using the search terms “physical activity”, “intervention”, “pregnancy”, “prenatal”, “postpartum”, “minorities”, “African American”, “Black”, “Asian”, and “Native American” in Academic Search Complete, CINAHL, PsycINFO, PubMed, and Web of Science to identify peer-reviewed English-language studies published January 2002 to present based on the following inclusion criteria: conducted in the U.S., PA included as an intervention component, and a priority population of pregnant or postpartum, minority women. Data extraction included sample description, study design, intervention description, methods, outcomes, limitations, and future research suggestions. Results: Ninety-seven articles were identified through the systematic search, 11 met inclusion criteria and were selected for data extraction. Nine were randomized control trials and 2 single-group designs. Three studies focused on either prenatal (n=1) or gestational and postpartum (n=2) Hispanic women. One study focused on African American pregnant and postpartum women and implemented a culturally tailored, theory-based intervention. Seven studies implemented interventions among multiethnic groups. Overall, interventions that used a total lifestyle approach reduced gestational weight gain and increased sports participation and likelihood of achieving PA guidelines during postpartum. Conclusions: Current evidence demonstrates success in reducing gestational weight gain that persists in keeping weight off during postpartum among minority women. However, additional research is needed within minority populations incorporating intervention styles that have demonstrated positive gestational and postpartum PA and weight gain outcomes (i.e. culturally tailored approaches).

### **Board 14**

#### **A Novel Approach to Reduce Metabolic Syndrome Risk**

McClendon M, Bowden RG, Holmes E, Griggs JO, Beaujean AA

Background: Metabolic Syndrome (MetS) is a significant public health issue that is associated with nutritional behaviors, obesity, glucose, insulin, blood pressure, obesity, waist circumference, waist-hip ratio, BMI, and lipid levels. High cholesterol levels have been linked with MetS in obese patients with published findings suggesting controlling high uric acid levels (common comorbid condition in obesity) with behavioral approaches will help lower cholesterol levels and MetS risk. The purpose of this study was to determine the relationship between uric acid and cholesterol levels among obese patients.

Methods: A retrospective secondary-data analysis was conducted on 66 patients from a public health clinic. Records were recorded during a ten year period. Demographic information (ethnicity, gender, age, BMI) were collected. Data was extracted for patients with a BMI  $\geq$  30, those following behavior change guidelines to control uric acid and had cholesterol levels recorded during the study period. Results: Spearman correlations revealed weak correlations between uric acid and total cholesterol ( $\rho=0.293$ ), uric acid and triglycerides ( $\rho=0.264$ ), uric acid and LDL-C ( $\rho=0.192$ ) and a weak inverse correlation between uric acid and HDL-C ( $\rho= -0.192$ ). A moderate correlation was discovered between all lipid variables and uric acid ( $\rho=0.418$ ). Conclusions: Modified uric acid levels predicted LDL-C and triglyceride levels with weak correlations. Additionally, weak correlations existed between uric acid and total cholesterol and HDL-C with an inverse relationship discovered with HDL-C. Manipulation of uric acid levels through dietary behaviors in previous studies suggests equivocal findings. Our study discovered that the modification of uric acid levels through dietary changes may help reduce elevated cholesterol levels and may be a means to control risk factors associated with MetS. Understanding the effects of dietary approaches on uric acid and cholesterol levels may help to create an innovative approach to treating MetS in public health and primary care settings.

### **Board 15**

#### **Multi-Theory Model-Based Determinants of Obesity Prevention Behaviors in Men**

Knowlden AP

Background. Obese men are at a higher risk for developing type 2 diabetes than women. Men also tend to carry greater abdominal adipose tissue than women; an independent risk factor for several negative health outcomes such as high blood pressure. Meal portion size, fruit and vegetable consumption, and physical activity are important preventative behaviors against obesity. The purpose of this study was to test the multi-theory model of health behavior change (MTM) for its capacity to predict these three protective factors. The MTM combines successful and empirically tested constructs from existing theories. The unique aspect of the MTM is its attempt to model both initiation and sustenance of behavior change. Methods. Men between 35 and 55 years of age with a body mass index  $\geq 25$  were recruited for this study. Modeling procedures included exploratory factor analysis, confirmatory factor analysis, and structural equation modeling. Results. Majority of the sample ( $n=311$ ) consumed 3 or more large-portion meals. For this behavior, behavioral confidence was the most important for initiation, while social environment was the most important for sustenance. Only 8% consumed more than 4 cups of fruits and vegetables per day. For this outcome, changes in the physical environment was the most important for initiation, while practice for change was the most important for sustenance. A majority engaged in more than 150 minutes of physical activity per week, but only 2% participated in 300 or more minutes of physical activity per week; amount recommended for those within overweight/obese categories. For this outcome, behavioral confidence was the most important for initiation while emotional transformation was the most important for sustenance. Discussion. Multi-theory constructs are important for predicting overweight and obesity in adult men. Based on the behavioral outcome of interest, certain preventative predictors of obesity in men may be more important than others.

### **Board 16**

#### **Adding Mindful Yoga Therapy (MYT) to Current Clinical Therapies Improves Stress Related Outcomes for Veterans**

Wright J, Kinzeler NR, Adcock K, Peters M, Gregory S, Wilson JF

Purpose: Veteran suicide, addiction and substance abuse related deaths are skyrocketing at alarming proportions due to post-traumatic stress disorder (PTSD). Cognitive Processing Therapy (CPT) is an evidence-based practice that has been utilized to help people recovering from PTSD; however, veterans continue to demonstrate gaps in their ability to use the coping skills learned in CPT. Effective,



complementary means are needed to combat the effects of PTSD and promote trauma recovery so veterans can deal with everyday stressors and challenges. Mindful Yoga Therapy (MYT) is a trauma-informed, evidence-based 8-week program offered in conjunction with traditional clinical therapy that utilizes mindfulness and self-regulation techniques to enhance well-being for veterans. Methods: MYT was offered at the VA Medical Center-Fort Thomas Residential Program as part of their 8-week clinical therapy protocol. Eight cohorts of veterans participated in the MYT program (n=79) including three women's PTSD, three men's PTSD, and two men's traumatic brain injury (TBI) cohorts. Pre-and post-test surveys included four validated instruments: Perceived Stress Scale (PSS), Brief Cope, GRIT, and the Mindful Attention Awareness Scale (MAAS). Additionally, participants' perceived physical and emotional well-being was recorded at the beginning and end of each session. Results: Paired samples t-tests indicated significant increases in MYT participants' mindfulness ( $p < .001$ ) and grit ( $p < .001$ ) from pre-test to post-test. Furthermore, MYT participants demonstrated significant reductions in perceived stress ( $p < .001$ ) and engaged in less maladaptive coping strategies (e.g. self-blame) at post-test ( $p < .001$ ). Participants also reported improvement in their physical and emotional well-being throughout the program. Conclusions: The MYT program had a positive impact on the psychological, emotional, and physical well-being of veterans with PTSD/TBI. Future studies will include evaluating the long-term impact of the program, as well as comparing outcomes for veterans completing the 8-week MYT program with veterans not receiving MYT as part of their clinical therapy protocol.

### **Board 17**

#### **Systematic Review of Electronic Interventions Delivered to Obese Middle-Aged Men**

Knowlden AP

**Objective.** The purpose of this study was to systematically evaluate the efficacy of electronically-delivered overweight/obesity treatment interventions targeting middle-aged men. **Background.** More than 71% of men in the United States are overweight or obesity. A recent review found men comprised only 27% of enrollment in 244 behavioral weight loss randomized controlled trials. Men are at higher risk for developing type 2 diabetes than women and have greater abdominal adipose than women, an independent risk factor for a number of health issues. Men are less likely than women to participate in face-to-face weight loss programs, preferring incremental, self-guided interventions (e.g. e-mail). **Methods.** Inclusion criteria for the review were interventions, using any quantitative design, targeting overweight/obese men, between 35 and 55 years of age, that incorporated at least one electronic modality. Search was delimited to articles published between 2005 and 2016, indexed in MEDLINE, CENTRAL, and/or Web of Science. Interventions were subjected to a methodological quality critique. **Results.** Eight studies met the inclusion criteria. All but one intervention applied a randomized controlled trial design. Most interventions were based on behavioral theory (n=7), but only three operationalized the constructs from the applied theories. Recruitment occurred at universities (n=1), work sites (n=2), communities (n=4), and among retirees (n=1). Duration of the interventions was 10 to 52 weeks with attrition rates ranging from 14% to 51%. Five interventions incorporated a face-to-face component, and only three were delivered exclusively online. **Conclusions.** Five studies applied intention-to-treat analysis; of these, three showed significant findings on at least one primary variable. Of those using only per-protocol analysis (n=3), two showed significant findings on at least one primary variable. Electronic interventions for treating overweight/obesity in middle-aged men show promise. More research is required to evaluate their full potential.

### **Board 18**

#### **Examining Firefighter Behavior After a 10-week Exercise Training Intervention: A Pilot Study**

Hollerbach BS, Jahnke SA, Harms CA, Barstow TJ, Heinrich KM

Firefighters struggle with poor health and fitness, including overweight and obesity (>80%). Limited fitness resources exist that are sensitive to the culture and work requirements of these “tactical athletes”. PURPOSE: This pilot investigation examined the effects of a novel training program on fire academy recruits’ exercise initiation, enjoyment, motivation, and adherence. METHODS: Thirteen participants recruited from a fire academy were randomly assigned to control (CG, n=6) or intervention (TF20, n=7). The CG continued current exercise habits. TF20 group was provided a 10-week online training program (The First Twenty) including periodized workouts, nutritional information, and mental readiness education. All participants completed baseline and post-intervention assessments including physical activity, enjoyment, motivation, and exercise barriers. Feasibility was assessed for TF20 group. RESULTS: Ten male recruits (23±2.7 years) completed the study (CG, n=3, 50%; TF20, n=7, 100%). At baseline, all participants reported strong exercise motivation and enjoyment. Common baseline exercise barriers included lack of time, facility absence/inconvenience, lack of exercise partners, school/work commitments, and family obligations. At baseline, 67% of the CG and 80% of TF20 group reported meeting moderate/vigorous Physical Activity Guidelines (PAG). Post-intervention, all participants reported meeting (some exceeding) PAG, including strength training. Post-intervention, all participants noted they enjoyed exercising and were motivated to continue. Time was the most significant barrier to exercise (67% of respondents) post-intervention, followed by school/work (45%), and family obligations (33%). TF20 participants completed 75% of assigned workouts. Participants noted desiring group workouts led by a certified coach/trainer as opposed to workouts completed individually. CONCLUSION: Participants in TF20 intervention were able to maintain their motivation and enjoyment for exercise and planned to continue. Intervention adherence and compliance were high and facilitated meeting PAG. Since TF20 program was developed by firefighters for firefighters, it offers a promising method of fitness training although intervention delivery is crucial for success.

## **Board 19**

### **Associations Between Type 2 Diabetes Familial Risk Profiles: Perceptions of Risk and Severity Among College Students with a Family History of Type 2 Diabetes**

Mkuu RS, Amuta AO, Barry AE, Espinoza LE

Purpose: To examine if Type 2 Diabetes (T2D) familial risk profiles such as, severity of a relatives T2D, the number, and type of relatives with T2D influences perceptions of T2D risk and severity among college students. Methods: A cross sectional study of undergraduate students from four colleges/universities across Texas was conducted. Linear regression and correlation methods were used to analyze the data. Results: A total of 441 undergraduates participated. The mean age was 20 years old (SD=1.3), majority, 85%, were female, and 62% were white. Familial T2D risk profiles included; 76.4% reporting having a first or second-degree relationship with their relative with T2D, 47% having a family member with severe T2D, and the average number of relatives identified with T2D was 2. Having a family member with severe T2D increased perceptions of T2D risk ( $B = 12.68$ ,  $\beta = .166$ ,  $p < .001$ ) and perceptions of T2D severity ( $B = 3.16$ ,  $\beta = .100$ ,  $p < .05$ ). Also, having a first or second-degree family member with T2D increased perceptions of T2D risk ( $B = 11.91$ ,  $\beta = .146$ ,  $p < .001$ ). Furthermore, increased number of family members with T2D was associated with T2D risk perception ( $B = 6.10$ ,  $\beta = .211$ ,  $p < .001$ ). Conclusion: College students generally grossly underestimate their T2D disease risk. However, our results suggest that familial risk profiles influence perceptions of T2D risk and severity among this young group. Experiencing relative’s severe T2D or having several relatives with T2D may provide a different view of T2D and heighten T2D risk perceptions. Several health behavior theories postulate that increased risk perceptions positively influence healthy behaviors. The heightened T2D risk perceptions due to familial risk profiles may be a leverage point to support the promotion of healthy lifestyles among a group that is experiencing increasing T2D prevalence.

## **Board 20**

## **The Effect of a Weight Gain Prevention Intervention on Physical Activity among Black Women: The Shape Program**

Greaney M, Askew S, Wallington SF, Foley P, Quintilian LM, Bennett GG

**Purpose:** Rates of physical inactivity are high among Black women living in the United States who are overweight or obese, especially those living in the rural South. This study was conducted to determine if The Shape Program, an efficacious weight gain prevention intervention, also increased physical activity. **Methods:** The Shape Program, a RCT of a weight gain prevention intervention implemented in community health centers in rural North Carolina, was designed for socioeconomically disadvantaged Black women who are overweight or obese. Moderate to vigorous physical activity was measured using accelerometers, and was summarized into one and 10-minute bouts. We assessed 12-month change in physical activity using analysis of covariance among those randomized to the intervention group. **Results:** Participants (n=121) had a mean age of 36.1 (SD=5.43) years and a mean body mass index of 30.24 (SD=2.60) kg/m<sup>2</sup>. At baseline, 38.0% met the physical activity recommendation (150 minutes of moderate-vigorous physical activity/week) when assessed using 10-minute bouts, and 76% when assessed using 1-minute bouts. Over the intervention period, there was no significant difference in physical activity participation or in the percentage of participants meeting the physical activity recommendations by intervention arm. **Conclusions:** Although prior research determined the Shape intervention promoted weight gain prevention, physical activity did not increase among intervention participants. The classification of bouts had a marked effect on the prevalence estimates of those meeting physical activity recommendations. Intervention participants may have focused on making dietary changes over increasing physical activity. More research is needed to understand how to present both physical activity and diet changes in weight gain prevention interventions, such as whether to present behaviors simultaneous or sequentially, and how to stress the importance of physical activity for overall health.

### **Board 21**

#### **An Assessment of the Associations between Type 2 Diabetes Familial Risk Profile and Health Protective Behaviors among Adolescents at High Risk**

Amuta A, Leon J, Jacobs W, Barry A

**Purpose:** Type 2 Diabetes (T2D) is typically considered an adult onset disease. However, there is a growing incidence of T2D among adolescents that has now reached epidemic proportions in the US. This study examined the influence of T2D familial risk profile (an estimate of actual risk) and perceived T2D risk on protective health behaviors (engaging in physical activity (PA) and vegetable consumption) among overweight/obese adolescents with T2D family history. **Methods:** Study participants (N=185) were overweight/obese undergraduate students with a T2D positive family history. Descriptive statistics and regression models were used to examine the data. **Results:** Results provided evidence that familial risk profile—having a higher number of relatives with T2D (B=10.12,  $\beta$  = .18, p=.023), a relative with severe T2D (B=23.55,  $\beta$  = .17, p=.022), and a close genetic relationship with a relative with T2D (B=37.94,  $\beta$  = .225, p=.002) was significantly associated with engaging in PA. Having a higher number of relatives with T2D (B=.180,  $\beta$  = .195, p=.014) and a relative with severe T2D (B=.74,  $\beta$  = .25, p=.001) was significantly associated with vegetable consumption. However, there was no association between perceived risk and engaging in protective health behaviors. **Conclusion:** Only actual risk (familial risk profile) was associated with practicing health protecting behaviors. Perceptions of risk was not associated with preventive behaviors. Study findings support the notion that even with apparent (being obese/overweight) and genetic susceptibilities, adolescents possess an unrealistic optimism about their susceptibility to diseases which may deter practicing health protective habits that could reduce their risk for T2D. Engaging in health protective behaviors was only triggered when relatives had severe T2D or had a first degree relative with T2D. Interventions that target adolescents are encouraged to consider

strategies that aid adolescents, particularly those at higher risk for T2D, estimate their risk more accurately.

## **Board 22**

### **Review of Physician-Based Physical Activity Counseling in Primary Care**

Stasi S, Pirkle CM, Braun KL, Maddock JE

**Purpose:** The purpose of this systematic literature review was to identify the most common techniques employed during physician-based physical activity (PA) counseling in primary care. **Methods:** The conduct of this systematic review was guided by PRISMA, and the formulation of the inclusion and exclusion criteria was guided by PICOS. Studies were included if PA counseling was conducted by a physician within a clinical care setting. The strength of the evidence was assessed using a quality measure produced by the Task Force on Community Preventive Services. **Results:** The search revealed 325 total articles, of which, 11 articles that tested the impact of physician-based PA counseling in primary care through a randomized controlled trial design were included. Training for the physician on PA counseling was provided in seven interventions. Ten studies based the PA counseling interventions in theory, and expected physicians to deliver their counseling in less than 3 minutes. A self-report measure was used in all interventions to assess patient's level of PA, with ten studies finding a significant improvement. In addition to physicians, five studies utilized a PA counselor or exercise specialist as a second level of intervention. **Conclusions:** Brief PA counseling and the utilization of self-report PA measures provide physicians with a practical and cost effective tool to promote and assess change in patients PA levels. Many physicians report the lack of confidence in their ability to effectively counsel their patients on PA, warranting the need for further training to prepare physicians. Training should include behavioral theory and instruction on brief PA counseling, as well as the use of a self-report PA measurement. Recommendations for the future are to assess physician level of preparedness to counsel their patients on PA, and to create guidelines that prioritize elements of PA counseling for the implementation within diverse populations and clinical settings.

## **Board 23**

### **Identifying Windows of Opportunity for Active Living and Healthy Eating Policies**

Greer AE, Castrogivanni B, Knausenberger AU

**Purpose:** We examined perceptions of active living and healthy eating community issues among representatives and senators [hereafter, policymakers (PMs)] and health directors (HDs) in Connecticut (CT) to identify potential "windows of opportunity" for policy changes. **Methods:** A questionnaire was sent via electronic and postal mail to PMs and HDs. Respondents were asked to rate their perceived level of importance for 22 community issues, of which 8 were related to active living and healthy eating. Respondent ratings were categorized into not important (1-3) versus important (4-5). The active living and healthy eating issues included: poor nutrition, access to healthy groceries, obesity, increasing traffic, lack of recreational activities, poorly planned development and sprawl, lack of pedestrian sidewalks and walkways, and pedestrian safety. Descriptive statistics were used to describe the data and chi square tests were used to examine associations between perceived importance of community issues and respondent type. **Results:** We received questionnaires from 72 PMs and 47 HDs for response rates of 39.78% and 62.67%, respectively. Of the 8 active living and healthy eating issues, only increasing traffic was rated by the majority of HDs (69.6%) and PMs (72.6%) as important. Compared to PMs, a greater proportion of HDs perceived obesity ( $p=.000$ ), access to healthy groceries ( $p=.013$ ), poor nutrition ( $p=.028$ ), lack of sidewalks ( $p=.014$ ), and pedestrian safety ( $p=.005$ ) as important community issues in CT. PMs were more likely than HDs to perceive lack of good jobs ( $p=.000$ ), quality of public education ( $p=.001$ ), and cost of living ( $p=.018$ ) as important community issues. **Conclusions:** This study revealed a "window of opportunity" in CT to create policies addressing

traffic, which has been inversely related to active living opportunities. Health advocates might benefit from linking active living and healthy eating issues to their impacts on jobs, education, and cost of living to gain PMS' support.

#### **Board 24**

##### **Prospective Associations Among Youth Assets and Physical Activity and BMI**

Oman RF, Clements-Noll K, Lu M, Dominguez A, Lensch T

Purpose: Research has found that assets protect youth from several youth risk behaviors and outcomes such as substance use, early sexual initiation and pregnancy. Few studies have assessed whether youth assets are associated with risk factors for cardiovascular disease. The purpose of this study was to determine if youth assets were prospectively associated with youth participation in physical activity (PA) and BMI. Methods: Five waves of data were collected annually over a 4-year period from youth and their parents (N=1,111 dyads) using computer-assisted, in-person interview methods. Generalized linear mixed model analyses were conducted, controlling for demographic variables, to measure associations among individual, family and community-level assets and meeting PA guidelines (150 minutes of PA per week) and BMI over 5 waves of data. Results: The sample was 54% female; baseline mean age= 14.2 years (SD=1.6); and race/ethnicity was 41% white, 29% Hispanic, 25% black, and 5% other. At baseline, approximately 45% met the weekly PA guidelines and mean BMI was 23.6 (SD= 5.5) Youth who possessed a greater number of community-level assets (i.e., 2, 3 or 4 assets vs. 0-1 assets) had significantly lower odds ( $p<.01$ ) of engaging in PA at a level that met the guidelines (ORs ranged from .68 to .70). Compared to youth with 0-1 family-level assets, youth with 3 family-level assets had significantly lower BMI scores ( $p=.013$ ). Community-level assets were also protective, youth with 4-5 community-level assets ( $p=.013$ ) had significantly lower BMI scores. Conclusions: Results were mixed. Youth with more community level assets had lower odds of meeting PA guidelines; however, higher levels of family- and community-level assets were associated with lower BMI scores. Individual-level assets were not significantly related to either outcome. Further research is necessary to further understand the inconsistent results and, in particular, why some assets are negatively associated with PA.

#### **Board 25**

##### **Investigating Socioeconomic Disparities in the Healthy Living Environments of Churches**

Bernhart JA, La Valley EA, Kaczynski AT, Jake-Schoffman DE, Dunn C, Peters N, Hutto B, Wilcox S

Purpose: Churches have a unique opportunity to influence the health of underserved communities. Physical resources in the church environment may significantly impact health behaviors, but little research has examined socioeconomic disparities in the health of church environments. This study investigated the relationship between neighborhood income level and the physical activity (PA) and healthy eating (HE) environments of churches in a rural, southeastern US county. Methods: As part of a larger study, early and delayed intervention churches ( $n=54$ ) were audited independently by two trained data collectors to assess PA and HE opportunities. PA and HE scores were calculated where higher scores indicate healthier environments. Census block group data for median household income were compiled using 2014 American Community Survey 5-year estimates. Data were analyzed using SAS PROC MIXED. Three ANOVA models accounting for clustering of churches within census tracts compared scores for the combined church environment, PA opportunities, and HE opportunities across block group income levels (high/medium/low) while adjusting for church attendance, community education level, church address WalkScore rating, and intervention grouping (early vs. delayed). Results: Scores for church environment PA opportunities and HE opportunities ranged from 5.0-42.0 ( $M=16.52$ ,  $SD=6.92$ ) and 10.0-24.5 ( $M=18.54$ ,  $SD=2.80$ ), respectively. Churches in low-income block groups scored 0.87 points higher ( $t=1.04$ ,  $p=0.30$ ) for HE opportunities and 2.40 points ( $t=-1.11$ ,

p=0.27) lower for PA opportunities compared to high- and medium-income block groups. Intervention status was not associated with scores for PA (p=0.09) or HE (p=0.41) opportunities. Conclusions: Block group income level was not significantly associated with scores for PA or HE opportunities. However, limited environmental resources may constrain churches' ability to make healthy living changes. Additional influences on enhancing the health of church environments, such as pastor and leadership support or implementing guidelines and policies, should be investigated further.

### **Board 26**

#### **The Role of Ego Networks in Compulsive Exercise Behavior among College Women**

Patterson MS, Gagnon L, Goodson P

Introduction: Though exercise is usually a healthful and recommended behavior exercise can become harmful. Compulsive exercise (CE), a form of exercise characterized by obligation and guilt, is highly prevalent among college-aged women. CE is dangerous because it often leads to the diagnosis of eating disorders, and is a behavior that persists beyond treatment of eating disorders. Social Network Analysis (SNA) is a method that allows researchers to look beyond the individual level of analysis and focus on relationships when analyzing behavior. Ego network analysis is a type of SNA that provides information about a focal person's network and how their relationships impact behaviors. Methods: This study conducted an ego network analysis on a sample of college women (n=204) to assert whether relational variables are associated with CE. Egocentric network data were collected via name generator and name interpreter questions. Participants were asked to list up to any five people they felt close to in their life (name generator) and provide information about each person they nominated (name interpreter). Physical activity, CE, and body dissatisfaction were also measured for each participant. Descriptive, bivariate, and regression analyses were conducted on demographic, attribute, and ego network data in SPSS. Results: Linear regression analyses ( $R^2=.091$ ,  $F=6.694$ ,  $df=202$ ,  $p<.0001$ ) suggest that body dissatisfaction ( $\beta=.440$ ,  $t=6.37$ ,  $p<.0001$ ), and physical activity participation ( $\beta=.217$ ,  $t=3.59$ ,  $p<.001$ ) predicted CE, and relationships with siblings ( $\beta=-2.13$ ,  $p=.035$ ), significant others ( $\beta=-.268$ ,  $t=-3.184$ ,  $p=.002$ ), and roommates ( $\beta=-.195$ ,  $t=-2.142$ ,  $p=.034$ ) were protective of CE behavior in this sample of college students.

Discussion: This study provided insight into intrapersonal and interpersonal variables in association with CE among college women. The relationship between a student and her significant other, college roommate, and siblings could hinder CE. This study supports the continued use of SNA and other systems science in eating disorder and CE research.

### **Board 27**

#### **"Are you still watching?": Correlations Between Binge TV Watching, Diet and Physical Activity**

Spruance LA, Karmakar M, Kruger JS, Vaterlaus JM

Purpose: The purpose of this study was to examine the relationship between binge television (TV) watching and diet, physical activity, and Body Mass Index (BMI) within a sample of college students. Methods: A randomized sample of 500 college students participated in an online, anonymous survey about their diet, physical activity, BMI, and binge TV watching habits. Respondents were asked to identify how many consecutive hours of TV watching during one sitting they consider to be binge watching and based on their description, respondents were asked if they binge watched in the last week and last month. Results: Over 20% of respondents identified as weekly binge TV watchers and over 70% identified as monthly binge TV watchers. The majority of the sample was female (57.83%), white (89.4%), and unmarried (80.2%). The mean age of respondents was 20.6. The average BMI for respondents was 23.4. More than half of the sample did not meet PA recommendations (52.8%) and many did not consume fruit (80.3%), green vegetables (86.1%), orange vegetables (89.8%) or other vegetables (81.5%) at least once per day. Most reported eating out or getting take out from a restaurant

once per week (44.1%). Multivariate logistic regression revealed that frequency of eating out (more than one time per week; OR=2.10) and gender (female; OR=1.34) was associated with higher odds of weekly binge TV watching. Gender (female; OR=1.68), fruit consumption (less than 1 time per day; OR=2.35), and class status (upper classman compared to lower classman; OR=2.17) were associated with higher odds of being monthly binge watchers. Conclusions: Identifying correlates of binge TV watching is germane for public health and higher education professionals. Because many lifestyle habits are formed during young adulthood and the increase in instant streaming devices and platforms, consideration for the health consequences of binge TV watching should be considered.

### **Board 28**

#### **Still Sitting at a Desk All Day? Applying Theory to Understand Work-Standing Behaviors among Sedentary Employees**

Walsh SM, Umstattd Meyer MR, Wu C, McClendon ME, Miller A, Nelon JL, Morehead TP, Bernhart JA, Bridges C

High levels of sedentary behavior have severe health consequences and yet are pervasive across most American workplaces. Evidence suggests sedentary work time can be reduced through environmental approaches (e.g., sit-stand/standing desks) without interfering with employee productivity. Limited research examining theory-based antecedents of work standing has been conducted and may provide useful information when designing sedentary-reduction interventions. The purpose of this study was to apply the theory of planned behavior (TPB) to examine time spent standing at work among employees using traditional seated-desks. Experience sampling methodology (ESM), 4 times-a-day for 5 consecutive workdays (Monday-Friday), was used to assess employees' standing time. TPB scales (attitude ( $\alpha=.73$ ), norms ( $\alpha=.83$ ), perceived behavioral control ( $\alpha=.77$ ), and intention ( $\alpha=.78$ )) were developed using recommended methods and collected once three days before ESM surveys began. Multilevel structural equation modeling was used to explore TPB-supported relationships (Mplus). University employees ( $n=104$ ; 80% female, 83% white, mean age=41.30) with sedentary occupation types ( $\geq 6$  hours/day at a desk) participated, completing 1743 daily surveys. Employees reported sitting for an average of 7.09 hours/day at work ( $SD=1.20$ ). Multilevel modeling (model fit: just fit) revealed subjective norm ( $\beta=.29$ ) and perceived behavioral control ( $\beta=.39$ ) were both related with intention; intention was not related with current standing behavior. Attitude was the only TPB construct related with current standing behavior ( $\beta=.60$ ). This is one of the first studies to examine TPB antecedents of real-time work-standing in a naturalistic field setting. Our respondents lacked environmental support to stand during desk-work (e.g., a standing desk option). Therefore, our result that intentions to stand were not associated with actual standing behavior was not surprising. Researchers and interventionists should consider multi-level intervention approaches to increase work standing that includes environmental change (providing sit-stand/standing desks) and behavioral intervention strategies, specifically addressing TPB constructs.

### **Board 29**

#### **Excessive Video-Game Playing and Associated Health-Risk Behaviors among Youth in the U.S.: Results from the 2013 YRBS**

Wang C, Kaigang L

Objective: To examine associations between excessive video-game playing or internet surfing ( $\geq 3$  hours on an average school day not for school work) and a multitude of health-risk behaviors in U.S. adolescents and if the associations vary by age, gender, and race/ethnicities. Methods: Data from the 2013 Youth Risk Behavior Survey (YRBS) ( $n=13,583$ ) was analyzed. Associations between video-game playing and health-risk behaviors were examined using logistic regression models controlling for demographic confounders. Results: Excessive video-game playing was reported by 41.3% of the

students. Compared to those who did not report excessively video-game playing, excessive video-game players were more likely to miss school (adjusted odds ratio [AOR]: 1.6; 95% CI: 1.3-1.9), be bullied (AOR: 1.5; 95% CI: 1.4-1.7), attempt suicide (AOR: 1.7; 95% CI: 1.5-1.9), use marijuana (AOR: 1.2; 95% CI: 1.1-1.4), have multiple sexual partners (AOR: 1.2; 95% CI: 1.0-1.3), drink soda/pop (AOR: 1.8; 95% CI: 1.5-2.0), are not physical active (AOR: 1.7; 95% CI: 1.5-1.8), watch television (AOR: 2.3; 95% CI: 2.1-2.6), and have insufficient sleep (AOR: 1.6; 95% CI: 1.4-1.89), controlling for age, gender, and race/ethnicities. Conclusion: Excessive video-game playing was associated with many health-risk behaviors among youth in the U.S. Greater awareness of the impact of video-game playing on health is vital. Further studies should explore effective interventions to reduce excessive video-game playing.

### **Board 30**

#### **Sedentary Behavior and Stress in Adults: An Application of the Theory of Planned Behavior**

Walsh SM, Umstattd Meyer MR, Morgan GB, Bowden RG, Doyle EI, Gordon PM

Background: Young and middle-aged U.S. adults exhibit high levels of sedentary behavior (SB) and report high levels of stress. The theory of planned behavior (TPB) has recently been successfully applied to SB, and may be useful in providing further insight into the dynamic, multi-faceted health issues impacting adults today. Objective: The purpose of this study was to evaluate the predictive value of the TPB in explaining objectively-measured SB over a 6-week period in a sample of adults. As a secondary objective, the relationship between stress and SB was examined over the same period. Methods: Participants (n=45, mean age=31 years [SD=8.11], 70% female, 83% White) completed surveys that included sociodemographic information and TPB constructs; wore an activity monitor (i.e., Actigraph accelerometer or SenseWear Armband) for 6-weeks; and completed the weekly stress inventory once weekly throughout the study. A longitudinal model was estimated to examine relationships across variables. Results: Descriptive analyses revealed participants were sedentary for an approximately 11 waking hours per day (SD=1.4). Bivariate analyses revealed slight inverse relationships between SB and intention for physical activity ( $r=-.153$ ) and perceived behavioral control ( $r=-.226$ ). Stress was slightly negatively related with SB ( $r=-.064$ ). Model fit indices modestly supported TPB constructs in explaining SB (i.e., a 2.3% reduction in person-level error variance); and a modest relationship between greater stress and less SB (i.e., additional 1.4% reduction in person-level error variance). Conclusions: Our results cautiously support continued exploration of the TPB to explain SB, as it appears the TPB alone does not fully explain the behavior. Future research should continue to explore theoretical determinants of SB, potentially expanding approaches to include more robust models; and further investigate the relationship between SB and stress. Researchers and practitioners are also urged to consider both SB and stress in holistic efforts to improve the health status of adults.

### **Board 31**

#### **Psychometric Properties of the Rural Active Living Perceived Environmental Support Scale (RALPESS): A Confirmatory Factor Analyses**

Nolan R, Umstattd Meyer MR, Spicer P, Hallam JS

Purpose: Evidence supports the role of perceived physical and social environmental factors as influencers of physical activity. However, measurement of perceived environmental supports for physical activity in rural, American Indian/Alaskan Native populations is lacking. This study describes the factor analytic structure of the self-report instrument known as the Rural Active Living Perceived Environmental Support Scale (RALPESS) within the population of interest. Design: Non-experimental, cross-sectional study. Setting: The RALPESS was administered across 19 rural cities within Oklahoma. Sample: One hundred thirty adults aged 18 and over completed the RALPESS and demographic items. The sample consisted of more females (82.4%) than males (17.6%) with an average age of 35.61 (SD = 12.27). The sample was predominantly American Indian/Alaskan Native (89.1%), with little diversity in



other racial/ethnic categories. Methods: Based on previously established psychometric properties, a confirmatory factor analysis using AMOS (Chicago, IL) was conducted to test the fit of the model. Six factors were identified as indoor areas, outdoor areas, town center connectivity, town center physical activity resources, school grounds, church facilities, and areas around the home or neighborhood. Results: The data adequately fit the hypothesized factorial structure. All original items were retained in the model for factors ( $p < .001$ ) and resulted in a reasonable chi-square goodness of fit (CMIN/DF = 1.787) and root mean square error of approximation (RMSEA = .078). The comparative fit index (.920) and parsimony goodness of fit index (.460) were acceptable. Cronbach's alpha for the total scale was acceptable at .916 and ranged from .801 to .943 for each of the seven subscales. Conclusion: The RALPESS is a reliable and valid tool for assessing perception of environmental supports related to physical activity within rural, American Indian/Alaskan Native populations. Key words: American Indian, Alaskan Native, perceived environment, physical activity, factor analysis.

### **Board 32**

#### **Correlates of Advance Care Discussions Among HIV Patients, Their Caregivers and Physicians** Knowlton A

With highly active antiretroviral therapy (HAART) and increasing AIDS survival and disability, informal (unpaid) HIV caregivers play a growing role in the well-being of persons living with HIV/AIDS. African Americans and current or former illicit drug users have disparities in access and adherence to HAART, which contribute to their disparities in HIV morbidity and mortality. Most persons at end of life, especially African Americans and persons with drug use disorders, do not communicate treatment goals and care preferences, contributing to healthcare expenditures often without major health benefits. Goals of palliative care are to enhance quality of life of patients and their families; optimize physical, mental, and social function; and facilitate patient-family-provider decision making and communication of patients' treatment preferences if the patient is incapacitated, including though not necessarily at end-of-life. The present study sought to identify correlates of HIV patients' reports of having discussed advance care preferences with their doctor. The study results will inform the development of HIV palliative care programs and approaches to improving quality of life for HIV patients and their caregivers.

### **Board 33**

#### **The Campus Effect: How the Campus Built Environment Influences Active Transportation Behaviors of a College Community Over Time**

Gilmore KE, Heinrich KM

Purpose: Increasing physical activity (PA) within college communities is more successful when the built environment is supportive. The purpose of this study was to assess changes in active transportation (AT) behaviors of Kansas State University (KSU) students, faculty, and staff from 2008 and 2016 as change occurred in the campus built environment. Methods: All students, faculty and staff at KSU's Manhattan campus were eligible to participate in this cross-sectional study, with gift cards advertised as participant incentives. Similar survey questions were asked both years. The online survey enquired about PA levels, transportation modes (TM), weekly commuting and parking habits, and written feedback regarding influential AT changes to campus. To assess changes in AT behaviors from 2008 to 2016, average rates of AT were compared. In addition, most influential reasons for TM were identified and compared. Themes were also identified within the written feedback. Results: In Spring 2016, 1006 participants (815 students, 80 faculty, 111 staff members) completed the survey; 1/3 had been frequenting campus for 5+ years. This compared to 800 total respondents in Spring 2008 (368 students, 256 faculty, 176 staff members). Student AT rates increased for walking (3 to 4 days/week) but decreased for biking (3 to 2 days/week). Overall increases in both walking and biking were seen for

faculty and staff (1.5 to 2 days/week). Similar factors influenced TM in 2008 and 2016, with time constraints (57%), parking availability (35%), and weather (34%) being selected as “most influential” on the 5-point Likert scale. Out of 403 written responses, main themes identified were: bike lanes (85), sidewalks (29), limits of construction (28), and KSU master plan (26). Conclusions: Built environment changes supporting AT coincided with increases in AT behaviors. Future research should examine the impact of these AT behavior changes on overall PA of the college community.

#### **Board 34**

##### **Physical Activity and Stress among Adults: Applying the Theory of Planned Behavior to Understanding Dynamic, Multifaceted Health Issues**

Walsh SM, Umstatted Meyer MR, Morgan GB, Bowden RG, Doyle EI, Gordon PM

Background: Young and middle-aged U.S. adults engage in low levels of physical activity (PA) and experience high levels of stress. Evidence suggests stress and PA behaviors are related, and that both are dynamic. Applying theory can help health professionals understand complex health relationships and promote positive behavior change. Objective: The purpose of this study was to examine the predictive value of the theory of planned behavior (TPB) in explaining objectively-measured PA in a sample of U.S. adults while accounting for stress levels across a 6-week period. Methods: Participants aged 20-49 [n=45, mean age=31, 70% female, 83% White] completed baseline questionnaires measuring sociodemographic information, TPB constructs, and weekly stress; and wore an objective PA monitor (e.g., Actigraph accelerometer or SenseWear armband) for 6 weeks. Participants also completed the weekly stress inventory once/week over the 6-week study period. A longitudinal model was estimated to examine relationships between variables across the 6 weeks. Results: TPB constructs explained 70.5% of the variance in intention for PA, and in the longitudinal model, TPB covariates reduced the person-level error variance in PA by 3.8% and were supported by model fit indices (e.g., reduction of ~60 in AIC and BIC). This indicates the TPB had predictive value in explaining objectively- and longitudinally- measured PA. The inclusion of the stress impact variable was not supported by model fit indices. Conclusions: Findings support the use of TPB in predicting intention and longitudinally-measured PA behavior. TPB constructs, however, consistently explain a smaller proportion of the variance in objectively measured PA than subjectively measured PA. Future research should continue to explore this discrepancy and examine more comprehensive models. Although not significant in this sample, future research should continue to examine the complex relationship between PA and stress to inform more holistic approaches to enhance the health of young and middle-aged adults.

#### **Board 35**

##### **Translation of an Evidence-Based Weight Loss Maintenance Intervention for Rural, African American Adults of Faith: Design of The WORD (Wholeness, Oneness, Righteousness, Deliverance)**

Yeary KHK, Moore P

Background: Obesity is a major public health problem that disproportionately affects African Americans. Although successful behavioral weight loss interventions for diverse groups have been developed, little work has translated evidence-based weight loss interventions with the aim of sustaining weight loss. Using a community-based participatory approach (CBPR) that engages the strong faith-based social infrastructure characteristic of rural African American communities is a promising way to sustain weight loss in African Americans. We built upon our 10+ year community-academic partnership to develop a weight loss maintenance intervention for rural, African American adults of faith. Methods: We used a CBPR approach and pilot data from two studies to design The WORD, a cultural adaptation of an evidence-based weight loss intervention (Diabetes Prevention Program). Results: The WORD is a

randomized controlled trial (RCT; 441 participants nested in 30 churches) that is implemented by trained community members. Both arms (treatment, control) receive a 16-session weight loss intervention and the treatment arm receives an additional 12-session maintenance component. Body weight, height, dietary intake, physical activity, and psychosocial measures are assessed at baseline, 6, 12, and 18 months. The RCT is in the midst of the active intervention phase. Results of the two pilot studies (Pilot 1: n=73; Pilot 2: n=26) that directly informed the trial's development, specific application of CBPR principles, interweaving of spiritual messages into the curriculum, and details regarding outcome, process, and cost-effectiveness measures will be described. Conclusions: As a faith-based intervention that uses a CBPR approach to address weight loss maintenance in rural African Americans, the WORD is a unique intervention that engages the faith-based social infrastructure of African American communities.

### **Board 36**

#### **The Effect of Physical Activity on Reducing Symptom Severity in Individuals with Posttraumatic Stress Disorder: A Meta-Analytic Review**

Boyd J, Moore J, Dolphin KE

Purpose: Because posttraumatic stress disorder (PTSD) becomes increasingly prevalent, affecting more than 7 million individuals, identifying successful treatment options is of growing concern. Current accepted treatments for PTSD include cognitive behavior therapy, exposure therapy, and pharmaceuticals. While physical activity has been shown to be effective in treating other anxiety disorders, it is not presently one of the primary treatments for PTSD. Thus, the purpose of this meta-analysis was to determine the effect of physical activity on PTSD symptom severity to explore the potential of physical activity as a potential treatment. Methods: Google Scholar, MEDLINE, and Academic OneFile databases were searched for both published and unpublished studies that assessed the impact of physical activity on PTSD symptoms. Results: Results indicated that physical activity leads to a reduction in PTSD symptoms ( $d=-.421$ ). The effect of physical activity varied across studies, and, in an attempt to explain this variance, sample (age, sex, and military status) and intervention (exercise type and intensity) moderators were examined. Type ( $p<.001$ ) and intensity of physical activity ( $p=.007$ ) impacted the effect on PTSD symptoms, with surfing ( $d=-.894$ ) and aerobic exercises ( $d=-.380$ ), as well as high intensity ( $d=-.381$ ) exercise, showing the greatest effect on symptom severity. Effect differences were also found between civilian and military populations ( $p=.003$ ), with greater reductions in symptoms being reported by civilian samples. Further, meta-regression found that the effect of physical activity on PTSD symptoms was smaller in older ( $p=.009$ ) and female ( $p=.005$ ) samples. Conclusions: The findings of this study suggest that physical activity leads to a reduction in PTSD symptoms. Although the current treatments are seemingly effective, stigma remains a major barrier to receiving crucial PTSD care; the introduction of physical activity as a treatment option may aid to alleviate this stigma and promote receiving effective treatment for PTSD.

### **Board 37**

#### **The Physical Activity Behavior Patterns Differences by National Senior Games (NSG) Participants – Continuity Theory Approach**

Kang S, Kim T, Cole S

Purpose: Physical activity in the aging population plays an important role in independent and healthy elderly life. As continuity theory takes into account for older adults' the continuity of the activities as they age, this research is to focus on identifying the time spent on physical activity and sport event participation by NSG participants. In specific, the purpose of this study was to examine both exercise hours and NSG participation differences by age and gender. METHODS: A total of 307 participants responded during the 2015 NSG (mean age= 66 years old, female=52.8%). An independent sample t-

test was employed to find out the mean score difference of exercise hours per week and NSG participation based on age (51 to 64, over 65) and gender. RESULTS: Regarding NSG participation, over 65 age group (M= 3.97, SD= 2.78) showed significantly higher participation rate than 51 to 64 (M= 2.67, SD= 1.32);  $t(305) = -4.969, p < .001$ . For exercise hours per week, over 65 age group (M= 6.30, SD= 4.50) also showed significantly higher than 51 to 64 age group (M= 5.30, SD= 2.80);  $t(305) = -2.397, p < .05$ . Gender showed no significant difference for both NSG participation and exercise hours, although male NSG participants spent slightly more time on exercise. CONCLUSIONS: As continuity theory indicated, older adults who actively participate in sports event showed higher exercise time spent as they age. NSG participants also showed that the average of exercise hours per week was more than twice compared to WHO recommendation. As female NSG participants also showed similar NSG participation and exercise hours compared to men, high exercise time spent and sports participation are not only for the older male. Encouraging older adults to participate in sports events may help them achieve a healthy life style.

### **Board 38**

#### **Qualitative Interview Analysis to Assess Implementation of a Nationwide, Community-Focused Program**

Garcia KM, Martin E, Garney KM, Primm KM, McLeroy K

Purpose: From March 2015-April 2016, the American Heart Association (AHA) implemented the Accelerating National Community Health Outcomes through Reinforcing (ANCHOR) Partnerships program, which implemented community-based interventions to increase access to healthy food and beverages, physical activity, and smoke-free environments in 15 communities. Initiatives were planned and implemented through community partners; most often with a coalition. Methods: To understand how communities planned and implemented initiatives, interviews were conducted with the AHA staff involved with high level program implementation, project managers in the field, and community-based AHA staff who were familiar with, but not directly involved in ANCHOR. Interviews gathered information on partnership characteristics, planning, implementation, successes, and challenges. A Qualitative analysis was conducted using the Consolidated Framework for Implementation Research (CFIR) as a coding scheme. Results: Answers varied based on the role of the person interviewed. AHA staff involved with high level implementation were able to view the program as a whole in terms of successes and challenges whereas, the other interviewees had a more limited perspective of their individual community. Overall, the common themes seen across all perspectives were: 1) ANCHOR built upon existing AHA initiatives, which allowed for expansion of community work in new ways; 2) however, sometimes funder imposed goals and restrictions were misaligned with AHA practices creating tension; 3) the short timeline caused challenges; and 4) there was a need to better define roles and responsibilities internally. Despite the challenges, ANCHOR was viewed positively, as an asset to the AHA through the addition of staff resources and an overall contribution to AHA's programs. Conclusions: Assessing a program from multiple viewpoints can be valuable in gaining an overall perspective of a program for betterment of internal implementation processes as well as community-level implementation.

### **Board 39**

#### **Neighborhood Social Cohesion and Leisure-Time Physical Activity Among Older Adults**

Yu CY, Lin HC

Background: Social cohesion captures the interdependencies among neighbors and has been shown to positively affect adults' leisure-time physical activity, yet little is known about the relationship among older adults. Moreover, little evidence has been gathered to reveal the potential bidirectional relationship between neighborhood social cohesion and leisure-time physical activity. This study

addresses these gaps by examining the bidirectional relationship between neighborhood social cohesion and leisure-time physical activity among older adults, in comparison with that in the general adult population. Methods: This study used data from the 2013 National Health Interview Study. The general and older adults comprised the two study groups. Structural equation models (SEM) were applied to test the bidirectional relationship between social cohesion and leisure-time physical activity, controlling for respondents' socio-demographic characteristics. Results: A total of 34,412 general adults and 7,714 older adults were included in this study. Older adults engaged in significantly fewer leisure-time physical activities, but had a higher level of neighborhood social cohesion than did the general adults. The SEM results showed that neighborhood social cohesion had a significant impact on light or moderate leisure-time physical activity in both groups of adults (general: standardized coefficient=0.071,  $p<0.01$ ; older: standardized coefficient=0.050,  $p<0.05$ ), while the impact of light or moderate leisure-time physical activity on neighborhood social cohesion was revealed only in the older adult group (standardized coefficient=0.023,  $p<0.05$ ). Conclusions: Neighborhood social cohesion was associated with older adults' leisure-time physical activity. The study findings implied that programs or events that build and strengthen social networks and provide supportive relationships within the neighborhood may be an effective approach to changing the level of physical activity for elders.

#### **Board 40**

#### **Individually Customized High Intensity Functional Training Improves Physical Function for Older Adults**

Heinrich KM, Becker CR

Purpose: Many older adults risk falling and have low fitness levels. Exercise programs that incorporate functional movements, mimicking real life, may help promote health and preserve independence. This pilot study investigated the feasibility and preliminary efficacy of a high intensity functional training (HIFT) intervention for older adults. Methods: Eight participants (75% female; mean age  $71\pm 6$ ) completed an 8-week, 2 days/week HIFT intervention. Certified trainers designed and delivered the individually customizable 60-minute group exercise protocol. Feasibility was assessed by initiation, adherence, and intervention acceptability. Efficacy was determined by changes in self-assessed perceptions of the difficulty for/confidence in performing daily tasks using the Outpatient Physical Therapy Improvement in Movement Assessment Log (OPTIMAL). Baseline and posttest functional movement assessments included a seated Timed Up & Go (TUG), Lift and Carry (LC), Chair Stand (CS), Stair Climb (SC), and 6-Minute Walk Test (6MWT). Results: Over 60% (8/13 screened and eligible) initiated participation; the adherence rate was 88% (N= 7). Intervention acceptability was high with participants liking the coaching/supervision, scaled exercises, small group and peers in age and abilities; they disliked the class time of day (9:30am) and wanted longer sessions. Participants were motivated to adhere because of personal goals, coach and researcher relationships, and the exercise program itself. Participants' perceived difficulty and confidence OPTIMAL scores did not significantly change from baseline to follow-up ( $p > 0.05$ ). Significant improvements were found for balance and mobility (TUG:  $-0.4 \pm 0.1$ sec,  $t = 2.45$ ,  $p = 0.05$ ) and carrying a weighted object (LC:  $-1.7 \pm 0.2$ sec,  $t = 3.83$ ,  $p = 0.009$ ). Conclusions: This novel intervention delivering HIFT training to older adults was well-received and feasible, and showed promise in improving functional movement for daily tasks. HIFT programs should be further explored in a larger study for their ability to maintain or improve physical function for older adults.