

**The American Academy of Health Behavior 2017 Annual Scientific Meeting:  
Health Behavior Research in the Age of Personalized Medicine**

**2016-2017 American Academy of Health Behavior Board of Directors\*  
2017 Conference Planning Committee**

**Abstract**

The American Academy of Health Behavior (AAHB) hosted its Annual Scientific Meeting at Loews Ventana Canyon in Tucson, AZ March 19-22, 2017. The theme of the meeting was “Health Behavior Research in the Age of Personalized Medicine.” World-renowned researchers presented their innovative work on topics ranging from personalized mobile health technologies to using genomics and genetics to motivate behavior change to precision medicine initiatives at the National Institutes of Health. Exceptional podium presentations, poster sessions, workshop, and networking opportunities invigorated and challenged meeting participants. This publication describes the meeting theme, podium presentations and workshop, and includes the refereed abstracts presented at the 2017 Annual Scientific Meeting. Table 1 lists all invited podium presentations and the workshop in order of presentation at the Annual Scientific Meeting. All refereed abstracts presented at the 2017 Annual Scientific Meeting then follow and are listed by abstract number (day # - board #, where Sunday, March 19<sup>th</sup> is day 1; Monday, March 20<sup>th</sup> is day 2; and Tuesday, March 21<sup>st</sup> is day 3).

2017 Conference Planning Chair: Adam Barry, PhD - *Texas A&M University*

2017 Program Planning Chair: Leigh Ann Simmons, PhD, M.F.T. - *Duke School of Nursing*

2016-2017 President: Jay Maddock, PhD, FAAHB - *Texas A&M University School of Public Health*

\*Corresponding author can be reached at: [Renee\\_Umstatt@d Baylor.edu](mailto:Renee_Umstatt@d Baylor.edu)

**Acknowledgements**

We would like to thank Adam Barry (Conference Planning Committee, Chair) and all of the 2017 Conference Planning Committee members for their hard work in making this Annual Scientific Meeting a huge success! Conference Planning Committee members included: Jay Maddock (President), Leigh Ann Simmons (Program Chair; Resource Development Council), Anna Greer (Past Chair), Matthew Lee Smith (Awards Council), Katie Heinrich (Marketing & Communications Council), Mary Steinhardt (Professional Development & Mentoring Council), Abigail Gamble (Research Review Chair), and Joanne Sommers (Executive Director). The authors have no conflicts of interest to report, financial or otherwise.

Table 1. *American Academy of Health Behavior (AAHB) 2017 Annual Scientific Meeting Podium Presentations and Workshop.*

Presenter	Affiliation	Presentation Title
Leigh Ann Simmons, PhD	Duke University, School of Nursing	<i>Beyond the Genome: Advancing Precision Medicine through Personalized Health Behavior Change Interventions</i>
Colleen M. McBride, PhD	Emory University, Rollins School of Public Health	<i>Using Genomics &amp; Genetic Information to Motivate Behavior Change</i>
Gregory K. Farber, PhD	National Institute of Mental Health, Director, Office of Technology Development and Coordination	<i>Major Initiatives at NIH: All of Us and the BRAIN Initiative</i>
Molly S. Bray, PhD	University of Texas at Austin	<i>Can Genomic Information Guide Precision Treatment of Weight Management?</i>
Matthew E. Rossheim, PhD	George Mason University	<i>Workshop: Managing and Analyzing Secondary Data with Stata</i>
Michael E. Newcomb, PhD	Northwestern University	<i>To Personalize or Not to Personalize? Optimizing eHealth and mHealth Interventions for Improving Sexual Health</i>
Brie Turner-McGrievy, PhD, MS, RD	University of South Carolina, Arnold School of Public Health	<i>Motivate, Monitor, and Measure: Using mHealth Approaches to Personalize Behavior Change</i>
Cinnamon S. Bloss, PhD	University of California, San Diego	<i>Impacts of Precision Health Technologies on Individuals and Society</i>
Sean D. Young, PhD	UCLA Department of Family Medicine, Executive Director, University of California Institute for Prediction Technology	<i>Using Social Media to Change and Predict Health Behaviors</i>
Allison Vorderstrasse, DNSc, APRN, FAAN	Duke University School of Nursing	<i>Is There a Role for Genomics in Diabetes and Heart Disease Prevention?</i>

*Note.* Listed in order of presentation at the 2017 AAHB Annual Scientific Meeting.

## Refereed Abstracts from the 2017 AAHB Annual Scientific Meeting

### Abstract 1-1

#### **Social Norms and Binge Drinking: Comparing Differences among National Samples of Adolescents and College Students**

Merianos A, Barry AE, Oluwoye OA, Jackson ZA

**Purpose:** Binge drinking represents an important public health concern. Alcohol-related behaviors of adolescents and young adults are influenced by what they perceive as the frequency and quantity of drinking among their peers. Therefore, we examined two nationally representative samples to: (1) assess whether underlying theoretical constructs were associated with alcohol-related group norms, and (2) determine the extent to which social norms influence adolescent-aged and college-aged binge drinking behavior, above and beyond confounding variables.

**Methods:** Secondary data analyses of the National Survey on Drug Use and Health (NSDUH) assessing adolescents 12-17 years old ( $N = 15,590$ ) and the National College Health Assessment (NCHA) assessing undergraduate student drinkers ( $N = 15,590$ ). Data were analyzed by conducting logistic and linear regression analyses.

**Results:** NSDUH results revealed that social norms of alcohol use ( $p < .001$ ) predicted binge drinking while controlling for age, sex, race/ethnicity, and socioeconomic status. Adolescents who perceived most/all of their peers engaged in alcohol use were 4.28 times more likely (CI = 4.26, 4.30,  $p < .001$ ) to report binge drinking as compared to those who perceived none/some of their peers used alcohol. Among adolescent binge drinkers, a perception that most/all of their peers engaged in alcohol use increased the number of days they binge drank ( $\beta = 0.10$ ,  $p < .001$ ). NCHA results indicated as quantity of perceived alcohol consumption increased, so too did the likelihood that a student would report binge drinking (CI = 1.181, 1.215  $p < .001$ ), above and beyond covariates. Undergraduate drinkers' perception of the quantity of alcohol consumed by peers during their last party/socialization was significant ( $\beta = .193$ ,  $p < .001$ ).

**Conclusions:** Social norms have a strong influence on alcohol use among adolescents and young adults, which may lead to increased binge drinking. Given that social norm misperceptions were related to higher binge drinking in our study, it is important for researchers to establish actual peer use rates versus perceived rates for adolescents and college students.

## Abstract 1-2

### The Relationship Between Self-Perceptions of Alcohol Intoxication and Breath Alcohol Concentration (BrAC)

Courchesne N, Reed MB, Clapp JD, Rossheim ME, Ruderman D

**Purpose:** The purpose of this study was to test the concurrent validity of a single measure of self-perceived alcohol intoxication using data from three different field research studies in three different settings examining drinking behaviors among late adolescents and young adults on a college campus, at college parties, and in a bar district popular with college students.

**Methods:** We utilized data collected as part of three separate field studies examining the etiology of college student drinking behaviors for this study. In each study participants were asked to indicate how intoxicated they felt at the moment (1 = no buzz, 2 = slightly buzzed, 3 = a little drunk, 4 = very drunk), as well as to provide a breath alcohol concentration (BrAC) sample as an objective measure of alcohol intoxication. Given the nested nature of the data (ie, participants nested within groups, parties, and bars), multilevel modeling was used to account for the non-independence of observations in each of the three datasets.

**Results:** After controlling for the grouping effect in each dataset, the results indicated a significant relationship between the measure of self-perceived intoxication and BrAC for the college campus data (Beta = 0.635,  $p < .001$ ), the party data (Beta = 0.430,  $p < .001$ ), and the bar data (Beta = 0.570,  $p < .001$ ).

**Conclusions:** Overall, the measure of self-perceived alcohol intoxication was moderately correlated with BrAC in each of the study settings. These results suggest that this single measure of self-perceived alcohol intoxication had good concurrent validity and could serve as an indicator of intoxication when objective measures of alcohol intoxication such as BrAC are not feasible or possible to collect.

## Abstract 1-3

### Impact of Self-Concept on Alcohol Use in Youth

Bartsch LA, King KA, Vidourek RA, Merianos AM

**Purpose:** Adolescent alcohol use is a major public health problem in the United States. While prevention efforts are common, alcohol still remains the most commonly used and abused substance among today's youth. Few studies have examined the relationship between specific components of mental health (ie, self-concept) and alcohol use, particularly across the varying developmental years. The primary aim of this study was to investigate the impact of self-concept on recent alcohol use (past 30 days) and recent binge drinking (five or more alcoholic beverages on one occasion) across three developmental ages.

**Methods:** This study employed secondary data analysis using the National Longitudinal Study on Adolescent to Adult Health (Add Health). All participants were in grades 7-12 ( $N = 6,504$ ) and completed the computer assisted in-home interview.

**Results:** A total of 17.3% of youth reported recent alcohol use and 11.3% reported recent binge drinking. Overall, recent alcohol use and recent binge drinking increased with increased grade levels. Youth who were male and white were also more likely than their counterparts to report recent alcohol use and recent binge drinking. Youth with low self-concept were at increased odds for recent alcohol use. This held true regardless of sex, race, and grade. Youth with low self-concept were at increased odds for recent binge drinking among male and female students, white students, and students in grades 7-8 and grades 11-12. Students in grades 7-8 with low self-concept had the highest odds ratios for recent alcohol use and recent binge drinking in comparison to students in grades 9-10 or 11-12 with low self-concept.

**Conclusions:** Results of this study underscore the importance for health educators and preventionists to consider the impact of self-concept on youth substance use at differing grade levels when developing substance abuse prevention efforts.

## Abstract 1-4

### Factors Associated with Self-estimated Breath Alcohol Concentration among Bar Patrons

Rossheim ME, Barry AE, Thombs DL, Weiler RM, Stephenson C, Krall JR, Reed MB, Clapp JD, Suzuki S, Walters ST

**Purpose:** To provide better insight on why people may drive after drinking alcohol, it is critical to identify the conditions under which drinkers underestimate their breath alcohol concentration (BrAC) in a natural drinking environment. Unfortunately, the literature on this topic is sparse. The current study examined factors associated with bar patrons' self-estimated BrAC in a high-risk college town setting.

**Methods:** Guided interview and BrAC data were collected from 510 participants recruited as they exited bars located close to two major universities: one in Florida and one in Texas.

**Results:** Participants with the highest measured BrACs underestimated their BrAC levels the most. Findings from multivariable linear regression analysis indicated that BrAC (std  $\beta = 0.239$ ,  $p < .001$ ) and number of alcoholic drinks consumed (std  $\beta = 0.123$ ,  $p < .01$ ) had significant positive associations with BrAC self-estimates. However, the association between estimated BrAC and perceived drunkenness was greatest in magnitude (std  $\beta = 0.451$ ,  $p < .001$ ). Among the 321 participants legally intoxicated for driving (BrAC  $\geq 0.08$  g/dL), 21.2% believed their BrAC was below the legal limit. Results from a logistic regression analysis indicated that higher levels of perceived drunkenness was associated with better self-recognition that one's personal BrAC level exceeded the legal driving threshold (OR = 3.32,  $p < .001$ ). Further, participants under 26 years of age had reduced odds of recognizing that they were legally intoxicated (OR = 0.24,  $p < .05$ ).

**Conclusions:** Given the inability of many drinkers to accurately self-assess their BrAC level, external alcohol-impaired countermeasures that seek to minimize intoxication levels of drinkers and deter driving should be the focus of future interventions.

## Abstract 1-5

### Patterns of Substance Use among Different Young Adult Peer Crowds

Moran MB, Villanti AC, Johnson A, Rath JM

**Purpose:** Identity is an important, yet understudied, predictor of health behavior. Social identity as a member of a group or social category is of particular relevance to young people. Peer crowd identity (identification with a macro-level crowd or subculture, eg, Preppies or Skaters) is associated with risk behavior. This work has primarily focused on adolescents, but newer work suggests peer crowd identity is also important for young adults. This study describes patterns of substance use across young adult peer crowds.

**Methods:** A nationally representative sample of 1,341 young adults aged 18-24 participated in an online survey between June and July of 2015. Using a measure adapted from Sussman and colleagues, participants were asked to select one of 15 peer crowds that they most identified with. Participants also reported ever and past 30-day use of alcohol, marijuana, and tobacco products.

**Results:** Substance use significantly differed by peer crowd. “Partiers” reported high levels of alcohol (83%), cigarette (27%), and e-cigarette (10%) use. The “Emo/Scene” crowd reported high levels of alcohol (88%), cigarettes (27%), and LCC (18%) use. The “Hippie” and “Goth” crowds reported high levels of marijuana (39% and 34%, respectively) and smokeless tobacco (14% and 16%) use. The “Country” crowd reported high levels of cigarette (23%) and smokeless tobacco (12%) use. “Skaters,” (12%) “Hip-Hop,” “Hipsters,” and “Partiers” (10% each) reported high levels of e-cigarette use. The “Young Professionals,” “Preppies,” “Homebodies,” “Activists” and “Religious” crowds reported low levels of substance use.

**Conclusions:** This is the first nationally representative study to demonstrate that substance use differs across young adult peer crowds. Because peer crowds vary on important norms, lifestyles, and preferences (eg, values, preferred media/entertainers, activities), they offer ways to target prevention and cessation interventions to high-risk crowds. This study’s findings will help inform such efforts.

## Abstract 1-6

### The Use of SBIRT in Primary and Emergency Care Settings Improves Substance Use Risk Behavior in Patients

Kinzeler NR, Borders MR, Augspurger E, Taylor K, Wilson JF, Starr S

**Purpose:** Considerable evidence demonstrates that Screening, Brief Intervention, and Referral to Treatment (SBIRT) is an effective practice in reducing substance use by at-risk users and in identifying individuals who need more extensive specialized treatment (Babor et al., 1996, 2007). SBIRT utilizes a public health approach to universal screening aimed at providing early intervention to at-risk users. In response to high rates of substance use and a treatment gap in their state (NSDUH, 2012), the Ohio Department of Mental Health and Addiction Services (OhioMHAS) launched a statewide SBIRT initiative aimed at reducing morbidity and mortality caused by substance use.

**Methods:** Seven primary care organizations in Ohio (health centers, hospitals, and emergency departments) received funding to implement SBIRT. All adult patients received a prescreen to rule out low/no-risk use. Patients with a positive prescreen were administered the respective full screen(s): AUDIT, DAST-10, and PHQ-9. Based on full screening score, three types of interventions were provided: feedback only (low risk), brief intervention (moderate risk), and referral to treatment (high risk). Outcome measures were collected for positive patients (moderate to high risk) at baseline and 6-month follow-up using SAMHSA's GPRA tool.

**Results:** Ohio SBIRT has screened 36,994 patients: 84.6% received feedback only, 10.1% received a brief intervention, and 5.3% received a referral to more extensive treatment. Paired samples t-tests indicated significant reductions in 30 day alcohol and illegal drug use ( $p < .001$ ), reductions in depression ( $p < .05$ ), and improvements in self-reported health ( $p = .002$ ) for positive patients from baseline to follow-up. The greatest reductions in substance use were from the highest risk treatment patients ( $p = .034$ ).

**Conclusion:** Ohio SBIRT has successfully aided primary care agencies in the integration of SBIRT approaches into their existing medical and behavioral health services, resulting in a sustainable program effective at reducing substance use and improving the health of patients.

## Abstract 1-7

### Adolescents' Beliefs about Nicotine: Findings from a Qualitative Study

Coleman BN, Johnson SE, Tessman GK

**Purpose:** Nicotine exposure during adolescence can cause addiction, may harm brain development, and could lead to sustained tobacco product use (USDHHS, 2014). The recent proliferation and increasing use of electronic nicotine delivery systems (ENDS), such as e-cigarettes, present a novel way for youth to be exposed to nicotine. The complex marketplace makes it increasingly important to understand what youth know and believe about nicotine.

**Methods:** Four focus groups were conducted ( $N = 32$ ) from October to November 2014 in Columbus, Ohio with adolescents aged 16-17 to explore their knowledge, perceptions, and beliefs surrounding nicotine. Groups were segmented by gender and smoking status. A semi-structured moderator guide was used to probe adolescents' beliefs about nicotine, including where it comes from and what effects it has. Focus group sessions were audio-recorded and the data transcribed and analyzed using a thematic approach.

**Results:** Youth in this study described their own uncertainty about nicotine and had difficulty disentangling beliefs about nicotine from their broader beliefs about cigarettes. Generally, nicotine was recognized as the chemical that makes cigarettes addictive, and some participants recognized that nicotine is available in other products—such as nicotine replacement therapy and non-cigarette tobacco products (eg, e-cigarettes). When prompted to discuss the effects of nicotine on the body and brain, there were high levels of uncertainty, particularly about whether negative health effects were caused by nicotine or other chemicals in cigarettes. Several youth described nicotine as a cause of addiction to smoking, but some also cited other causes including the social environment as well as the subjective effects associated with smoking.

**Conclusions:** Communicating to adolescents about the harms of tobacco products is becoming increasingly complex with the growing diversity of nicotine-containing tobacco products. Thus, understanding how adolescents think about nicotine would be useful for effective communication about novel tobacco products, such as ENDS.

## Abstract 1-8

### **Tobacco Cessation among American Indian/Alaska Native Individuals: The role of State Quitlines in Providing Tailored Services for this Population**

Yuan NP, Schultz J, O'Connor PA, Bell ML

**Purpose:** Data on tobacco use and cessation remain limited for American Indian and Alaska Native (AI/AN) populations. We examined tobacco use and cessation behaviors among AI/AN individuals seeking telephonic services from the Arizona Smokers' Helpline (ASHLine). Differences in predictors of cessation at 7-month follow-up between AI/AN clients and non-Hispanic, White (NHW) clients were investigated.

**Methods:** Between 2011 and 2016, self-report data on demographics and tobacco use and related behaviors were obtained at enrollment. Thirty-day tobacco cessation was assessed at 7-month follow-up. Logistic regression was used to investigate predictors of cessation for AI/AN and NHW clients in separate models. Differences in predictors of cessation between AI/AN and NHW were investigated using interactions with race/ethnicity and each predictor.

**Results:** Out of 34,810 individuals who enrolled, 13,794 had 7-month data. There was no difference in retention between AI/AN (297/797 = 37.3%) and NHW clients (13497/34013 = 39.7%;  $p = .17$ ). There was no significant difference in 30-day cessation between AI/AN clients (38.0%) and NHW clients (38.7%;  $p = .33$ ). Amongst AI/AN clients, tobacco cessation was associated with medication use and another smoker in the home. Amongst NHW clients, male gender, age, medication use, and home smoking bans were associated with higher cessation rates; younger age of onset, having a chronic condition, Fagerstrom score, and another smoker in the home were negatively associated with cessation. The only predictor that significantly differed between groups was having another smoker in the home ( $p = .02$ ). For AI/AN and NHW clients, the odds ratios from stratified models were 0.38 (95% CI: 0.18,0.79,  $p = .009$ ) and 0.90 (95% CI: 0.82,0.99,  $p = .04$ ), respectively.

**Conclusions:** Quitlines play an important role in promoting tobacco cessation among AI/AN people, especially in states with higher proportions of AI/AN residents. Special attention may be directed towards understanding the role of other smokers in the home and related socio-cultural influences for this population.

## Abstract 1-9

### Adolescent Perceptions and Experiences Regarding Electronic Nicotine Delivery Systems (ENDS): Recommendations for Intervention Development

Will KE, Mondejar KA, Paulson AC, Herman MC

**Purpose:** Electronic nicotine delivery systems (ENDS; also known as e-cigarettes or vapes), are relatively new to the market, are not well understood, and are often marketed as a “safer” alternative to traditional combustible cigarettes. Adolescent uptake is rising, prompting concerns about the health effects and long-term consequences of using these products.

**Method:** Three focus groups were conducted with teens ( $N = 31$ ) in Virginia to investigate youth experiences with and perspectives on ENDS to inform development of risk-communication approaches for teens. Participants included both genders (52% male), ranged in age from 12 to 19 years old ( $M = 14.5$  years), and were representative of the community (61% white; 29% black; and 10% other/mixed race). Teens did not have to use ENDS to participate.

**Results:** Results indicate that teens have a number of troubling beliefs about ENDS, including that they emit harmless water vapor, do not contain nicotine, are less addictive, and are much healthier than traditional cigarettes. Further, teens perceive vaping as trendy and normative in their environments, even on school grounds. Adolescent exposure to ENDS information originates entirely from peer groups, online media, and claims made by marketers/sellers. Perceived reasons for ENDS use focused on beliefs that they are relatively harmless and not addictive, as well as on desires to reduce stress, fit in, or look cool. Paradoxically, traditional combustible cigarettes were perceived as uncool, unhealthy, and a way to lose friends. Teen-generated suggestions for combatting the ENDS trend included: (a) providing education, specifically regarding chemicals present in the aerosol inhaled; (b) making use seem uncool, perhaps by enlisting celebrity anti-vapers in the cause; (c) banning flavors; and (d) increasing cost and reducing availability.

**Conclusions:** Teens harbor many misconceptions about ENDS and accept marketers’ unsupported claims of safety in the absence of counter marketing. Additional intervention efforts are needed to discourage teen use.

## Abstract 1-10

### Examining Tobacco Smoke Exposure-related Illnesses in Pediatric Emergency Department Patients

Merianos AL, Dixon CA, Mahabee-Gittens EM

**Purpose:** Smoking and tobacco smoke exposure (TSE) are together the most preventable cause of death nationwide. Pediatric emergency departments (PEDs) may be an opportune, yet underused venue to decrease TSE-related illnesses among children. Identifying populations at risk can assist in developing tobacco interventions for caregivers. The purpose of this study was to determine the relationship between TSE-related illnesses and patients presenting to the PED.

**Methods:** A retrospective review of electronic medical records of 0-18 year old patients ( $n = 116,084$ ) who presented to the PED at a Level 1 pediatric trauma center was conducted. Sociodemographic characteristics and TSE-related illnesses were extracted from records. Caregiver tobacco use was also extracted and patients with a “yes” response were defined as having a positive TSE status and those with a “no” response were defined as having a negative TSE status. Two multivariable logistic regression models were conducted to assess patient differences based on TSE-related illnesses among all patients and patients who had a positive TSE status.

**Results:** More than one-fifth (21.7%) of patients had TSE-related illnesses. Patients who were younger, male, non-white, Hispanic; had Medicaid/Medicare insurance, low triage acuity (low risk for clinical deterioration); were admitted to the hospital were significantly more likely to have TSE-related illnesses (all  $p < .05$ ). Twenty-eight percent of PED patients with TSE documentation had positive TSE status. Though regression models for positive TSE indicated similar findings (all  $p < .05$ ), no difference was found based on ethnicity.

**Conclusions:** TSE-related illness rates among children presenting to the PED are high and certain populations are most at risk for TSE-related illnesses. PEDs, especially those that care for large numbers of children, should offer tobacco interventions, targeting at-risk populations and caregivers most likely not receiving interventions in other healthcare settings.

## Abstract 1-11

### Does Smoking Affect Treatment Allocation and Outcomes in Patients with Rotator Cuff Tears

Robbins CB, Landfair GL, Gagnier JJ, Bedi A, Carpenter JE, Miller BS

**Purpose:** The objectives of this study were (1) to assess the influence of smoking status on treatment allocation (surgical versus non-surgical management) and (2) to compare the functional outcomes of surgical and non-surgical treatment of rotator cuff tears between smokers and non-smokers.

**Methods:** A prospective cohort study included 196 subjects with full-thickness rotator cuff tears who were followed prospectively for one year. The Western Ontario Rotator Cuff Index (WORC), American Shoulder and Elbow Surgeons (ASES) score, and pain scores were collected six times from baseline through one year. Multivariate logistic regression was used to determine predictors of treatment allocation. Mixed-effects repeated measures regression models were used to assess the effect of smoking on outcomes after surgical and non-surgical management.

**Results:** The non-smoking group was older than the smoking group (61.4 years vs. 54.2,  $p < .001$ ). There was no significant difference between smoking status and patients who were obese, had diabetes, had rotator cuff symptoms for longer than a year, had a large RCT, or received workers' compensation. Smoking status was not significantly associated with treatment allocation (OR = 0.85,  $p = .762$ ). Subjects who smoked reported lower baseline adjusted WORC scores (40.9 vs. 54.5,  $p < .001$ ), lower ASES scores (43.0 vs. 59.9,  $p < .001$ ), and worse pain scores (59.5 vs. 42.9,  $p < .001$ ). Within the non-surgical group smokers reported significantly lower WORC scores (38.0 vs. 56.8,  $p = .013$ ), lower ASES scores (39.2 vs. 61.6,  $p = .087$ ), and worse pain (61.9 vs. 42.1,  $p = .018$ ). Surgical patients who smoked reported significantly lower WORC scores (31.1 vs. 40.4,  $p = .035$ ), lower ASES scores (37.7 vs. 50.0,  $p = .014$ ), and worse pain scores (63.2 vs. 51.5,  $p = .041$ ).

**Conclusions:** Subjects who smoked reported worse pain and function scores at baseline and follow-up, regardless of treatment allocation. The disparity in function and pain in smokers was less pronounced in those who underwent surgery than those who received non-surgical management.

## Abstract 1-12

### **Authoritative Parenting Behaviors and Marijuana Use among Hispanic Adolescents: Findings from a National Study**

Merianos AL, King KA, Vidourek RA, Wood K

**Purpose:** Marijuana remains the most commonly used illicit drug among Hispanic adolescents. The purpose of this study was to determine the influence authoritative parenting behaviors have on lifetime, past year, and past month marijuana use among Hispanic adolescents. We also examined this relationship by developmental age.

**Methods:** A secondary data analysis of the 2013 National Survey on Drug Use and Health was conducted. Participants included a nationally representative sample of 3,457 Hispanic adolescents who were 12-17 years old. We performed logistic regression analyses to examine whether lifetime, past year, or past month marijuana use differed based on seven authoritative parenting behaviors (ie, checked if homework was done; helped with homework; told youth to do chores around the house; limited amount of television watched; limited amount of time spent out on school nights; told youth they did a good job; and told youth they were proud of them). We conducted follow-up logistic regression analyses to examine whether these behaviors influenced marijuana use by age.

**Results:** Results indicated that 19.5% Hispanic participants reported lifetime marijuana use, 14.5% reported past year use, and 7.5% reported past month use. Lifetime, past year, and past month use significantly differed based on authoritative parenting behaviors. Hispanic adolescents at increased risk of marijuana use were those with parents who never/seldom performed authoritative parenting behaviors (all  $p < .03$ ) compared to those with parents who always/sometimes performed these behaviors. While results indicated that authoritative parenting behaviors had a statistically significant effect against marijuana use, the protective effect was highest for 12-13 year olds, followed by 14-15 year olds and then 16-17 year olds.

**Conclusions:** Professionals should consider these findings when developing substance use prevention programming for Hispanic adolescents. Parents should be included in prevention efforts and educated on how to perform authoritative parenting behaviors.

## Abstract 1-13

### Defining and Measuring Family Structure with Adolescent Risk Behaviors: A Systematic Review

Sendowski VM, Maness SB

**Purpose:** Family structure has been found to be associated with many youth risk behaviors such as sexual risk taking, substance abuse, and delinquency. However, family structure is inconsistently defined as a construct and is not always static. This review evaluated how family structure is conceptualized, defined, and measured in the literature on youth risk behaviors.

**Methods:** A literature search of electronic databases CINAHL, PsycInfo, and PubMed was conducted in June of 2016 to identify studies published between January 2006 and June 2016, meeting all inclusion criteria. The Preferred Reporting Items for Systematic Reviews methodology was applied throughout the review process.

**Results:** A review of 53 studies found considerable variation in the definition and measurement of this construct. The domains of family structure most commonly assessed for adolescents were: intact or non-intact (two parent biological or adoptive, nuclear, traditional), transitions or changes, marital status (married, single, cohabitating), head of household gender (in non-nuclear families). Less common domains include other related or unrelated members of the household in which the adolescent lives.

**Conclusions:** Although family structure is multidimensional, the extent to which family structure is measured is limited. Family structure as used with youth risk behavior overwhelming describes the stability and nature of parental relationships. Analysis commonly involves dummy coding, using two biological/adoptive parents as the reference category. Family structure was generally assessed for the current household, but some studies assessed family structure longitudinally or for multiple time points. The present study provides a framework for considering how family structure is defined and utilized for different youth risk behaviors and implications for future research.

## Abstract 1-14

### Medical Marijuana Legalization and Associated Illicit Drug Use and Prescription Drug Misuse among Adolescents in the U.S.

Wong SW, Lin HC

**Purpose:** Substance abuse among adolescents has been a major public health issue in the United States. As marijuana use has been considered a gateway to other illicit drug uses, this study examined the associations of state-level medical marijuana law (MML) implementation and illicit drug use and misuse of prescription medications among adolescents, using propensity-score matching to minimize selection bias from systematic differences between states with and without MML.

**Methods:** This was a retrospective two-year cross-sectional study. Adolescents aged 12-17 years in the 2013-2014 National Survey on Drug Use and Health were extracted. This study matched subjects using one-to-one nearest-neighbor matching based on their sociodemographic characteristics and marijuana use status. Seven weighted logistic regressions were conducted to examine the associations between MML and four types of illicit drug (cocaine, heroin, hallucinogens, and inhalants) use and three types of prescription drug (pain reliever, tranquilizer/sedative, and stimulant) misuse. Sociodemographic factors and marijuana use were controlled in logistic regressions.

**Results:** A total of weighted 22,270,305 matched adolescents were included in this study. Results from logistic regressions revealed that adolescents who lived in the states that had legalized medical marijuana had a higher likelihood of using “hard” illicit drugs such as cocaine and heroin in the past 12 months (OR = 1.63, 2.61, respectively;  $p < .05$ ), but not hallucinogens, inhalants, and prescription drugs.

**Conclusions:** This study suggests that for the states which have legalized medical marijuana, drug prevention policies and educational interventions to adolescent should be implemented not only directly on the use of marijuana, but also on the “hard” illicit drugs such as cocaine and heroin. And the states that have not legalized medical marijuana should take into account the possible effect of MML on use of other illicit drugs when making the law.

## Abstract 1-15

### **Exploring Adolescent Perspectives on Nicotine Replacement Therapy for Smoking Cessation: A Qualitative Study**

King JL, Merten JW, Young ME, Pomeranz JL

**Purpose:** Each day within the United States, 2,100 adolescents become daily cigarette smokers. Many of these young people will continue to smoke for decades, in part due to lack of best practice for cessation among this population. Nicotine replacement therapy (NRT) is widely recommended for adults, yet efficacy studies show limited success among adolescents. This study aimed to explore adolescent smokers' beliefs and interest in NRT for smoking cessation.

**Methods:** Eleven 18-19 year olds who smoked while in high school completed semi-structured, one-on-one, qualitative interviews in Florida in 2016. The interview guide contained probes related to smoking initiation, smoking likes and dislikes, past quit attempts, barriers to quitting, healthcare provider input, and electronic cigarettes for cessation. Adolescents were asked to reflect and respond based on their high school experiences. Interviews were recorded digitally, transcribed verbatim, and coded and analyzed using the constant comparative method.

**Results:** Ten participants were White (90.9%), four were Hispanic (36.3%), one was Black (9.1%), and five were male (45.5%). Qualitative results centered on three categories: smoking background, general cessation strategies, and NRT preferences. Most factors related to NRT use were individual preferences such as familiarity or concern about side effects, with some external factors, including access. Novel factors identified within this study include the importance of NRT being discrete, familiar, and usable. This sample did not feel NRT in its current forms was applicable for adolescent smoking cessation. However, adolescents interviewed did offer suggestions for improvements and alternative cessation strategies.

**Conclusions:** Adolescent smokers remain a priority target for cessation interventions. NRT was not applicable for this sample. These data can be used to tailor future adolescent cessation approaches.

## Abstract 1-16

### **Child and Adolescent Mental Disorders and Health Care Disparities: Results from the National Survey of Children's Health, 2011-2012**

Lu W

**Purpose:** Mental disorders have severe impact on children's health and well-being and can lead to academic failure, violence, substance use, and other risk-taking behaviors for some children. Most seriously, the interplay of mental disorders and other factors (eg, social strains) can lead to suicide, which was the second leading cause of death for U.S. children aged 10-19 years in 2014. Thus this study aimed to (1) provide the epidemiology of mental disorders among U.S. children, and (2) examine disparities in their mental health service use.

**Methods:** Parents of children aged two to 17 years ( $N = 85,637$ ) participated in the 2011-2012 National Survey of Children's Health and were asked whether their children currently had any mental health conditions, such as ADHD, depression, or anxiety. Mental health service use was assessed by asking parents whether or not, during the past 12 months, their child had received any treatment or counseling. Pearson's  $\chi^2$  test and multivariable logistic regression analysis were conducted.

**Results:** Based on parents' report, 14.8% of children had one or more disorders at the time of the survey. ADD or ADHD was the most prevalent mental disorder (7.9%), followed by speech/language problems (4.8%), developmental delay (3.6%), anxiety (5.1%.3%), and behavior/conduct problems (3.2%). Tourette Syndrome was the least prevalent disorder (0.2%). Overall, 7,819 children were reported to need mental health care, among which 61% received services from a mental health professional. Compared with white (68.1%), Hispanic (53.8%,  $p < .01$ ) and Black children (44.9%,  $p < .001$ ) were less likely to be reported to have received services. Children covered by public insurance (eg, Medicaid or CHIP) had greater odds of service use than those without insurance (59.2% vs. 41.9%,  $p < .05$ ).

**Conclusion:** The prevalence of mental disorders remains high, and sustained efforts are needed to reduce the persisting disparities in mental health service use among children and adolescents.

## Abstract 1-17

### **Socioecological Factors, Children's Flourishing and Associated Physical and Mental Health Status**

Kim T, Lin HC, Seo DC

**Purpose:** "Flourishing" is a new expression of happiness and well-being, which is more proactive and comprehensive willingness of achieving one's quality of life. Flourishing may promote and improve children's health and well-being both emotionally and physically in their later life. The objectives of this study were to examine: (1) the relationship between children's flourishing and socioecological factors at individual, family, and environment levels; and (2) how children's flourishing is associated with children's overweight and mental health status.

**Methods:** A total of 45,309 children and adolescents were drawn from the 2011-2012 National Survey of Children's Health (mean age = 13.6 years). Two OLS regressions were performed to examine the association of socioecological variables with flourishing and depression. A logistic regression was performed to examine how children's flourishing was associated with their overweight status while socioecological factors, gender and race/ethnicity were controlled.

**Results:** Children's individual characteristics, parents' capacities, family functions, and environmental factors were associated with children's flourishing (all  $p$ -values  $< .05$ ). Female children who showed a high level of flourishing were less likely to be overweight ( $p < .05$ ). Children's depression was negatively associated with their level of flourishing ( $p < .05$ ).

**Conclusion:** Multilevel socioecological factors appear to be associated with children's flourishing and their physical and mental health. Parent-involved children's physical activities and family and social support are crucial in children's flourishing. Children's flourishing favorably influences their weight and mental health status. Efforts to improve children's flourishing may help them maintain healthy weight and sound mental health.

## Abstract 1-18

### Self-Perceptions and Factors Associated with Being ‘Put Down’ at School among Middle and High School Students

Browman A, Orpinas P, Barry A, Rossheim ME, Wilson KL, McKyer ELJ, Smith M

**Purpose:** Approximately 50% of youth report being bullied and 10% report being bullied regularly. While the ramifications of bullying are well studied, less is known about adolescents’ self-perceptions relative to their bullying experiences. This study identified: (1) the prevalence of bullying activity among a sample of middle and high school students; (2) positive and negative descriptors used by these students to self-identify; and (3) intrapersonal and normative factors associated with being “put down” by others at school.

**Methods:** Data were analyzed from 1,027 middle and high school students who completed the Adolescent Health Risk Behavior Survey. Bivariate analyses compared sample characteristics by sex and grade level. A binary logistic regression model using backwards entry was fitted to identify intrapersonal and normative factors associated with being “put down” by others at school.

**Results:** Over 16% of participants reported being put down by others at school. Students who identified more with the negative words confused, unattractive, dull, and careless reported being put down at school ( $p < 0.05$ ). Students who identified less with the positive words popular, smart, considerate, cool, and self-confident also reported being put down at school ( $p < .01$ ). In multivariate analyses, high school students were less likely to report being put down at school, relative to middle school students (OR = 0.61,  $p = .015$ ). As students scored higher on the Negative Self-Description Scale, their odds of being put down significantly increased (OR = 1.13,  $p < .001$ ). Conversely, as students scored higher on the Positive Self-Description Scale, their odds of being put down significantly decreased (OR = .84,  $p < .001$ ). Students who perceived larger proportions of their friends drank alcohol regularly were less likely to report being put down at school (OR = 0.81,  $p = .049$ ).

**Conclusion:** Findings suggest that school- and community-based interventions should begin early and include strategies to enhance adolescents’ self-perceptions for the purposes of raising self-awareness and forming healthy/positive identities.

## Abstract 1-19

### Perceived Personal and Environmental Resources Mediate the Relationship between Positivity and Emotional Dysfunction in Adolescent Females

Lehrer MH, Janus KC, Gloria CT, Steinhardt MA

**Purpose:** Females experience a decline in emotional functioning (eg, increased depressive symptoms and perceived stress) during adolescence. Fredrickson's Broaden-and-Build Theory hypothesizes that positivity – the ratio of one's experienced positive to negative emotions – broadens one's attention and thinking and promotes a trajectory of growth that over time builds personal and environmental resources. Positivity is thus posited to promote emotional functioning through increased perception of personal and environmental resources. Adult research offers support for this mediation model, but it has not been examined in adolescents. This study investigated the relationship between positivity, perceived personal and environmental resources, and emotional dysfunction in adolescent girls. It was hypothesized that perceived resources would mediate the relationship between positivity and emotional dysfunction.

**Methods:** Participants ( $n = 510$ ) attending an all-girls public school completed a survey assessing emotional dysfunction (depressive symptoms and perceived stress), positive and negative emotions, and personal and environmental resources (resilience, hope, adaptive coping, community connectedness, social support, and school connectedness). The six perceived resources were combined into one latent variable, and structural equation modeling tested the mediating effect of perceived resources on the relationship between positivity and emotional dysfunction.

**Results:** The mediation model accounted for 63% of the variance in emotional dysfunction. Positivity exerted a significant direct effect on emotional dysfunction ( $\beta = -.16, p < .01$ ), but its influence was primarily mediated through perceived resources (indirect effect:  $\beta = -.43, p < .001$ ).

**Conclusions:** The impact of positivity on emotional dysfunction is primarily but not entirely mediated by perceived personal and environmental resources. Schools should consider strategies to enhance experiences of positive emotions and/or decrease experiences of negative emotions, in conjunction with encouraging student awareness of both personal and environmental resources.

## Abstract 1-20

### **Chronic Disease, Social Support, and Mental Health among Older Women Residing in Barbados: Results from the Survey on Health, Well-being, and Aging Study**

Harvey IS, Sherman LD, Spears EC, Mkuu RS, Johnson K

**Purpose:** Recent evidence suggests interrelationships between depression and chronic diseases. The comorbidity of type 2 diabetes and arthritis is a major problem compromising the health of aging women and has not been examined among older Caribbean women. The objectives of this study were to (1) investigate how social support affects older women's depressive symptomology with arthritis or type 2 diabetes, and (2) explore how social networks improve self-management behaviors among aging women residing in Barbados.

**Methods:** The sample included 614 women (mean age = 72.9 years,  $SD = 8.2$  years) diagnosed with type-2 diabetes or arthritis who participated in the Survey on Health, Well-being and Aging in Latin America and the Caribbean survey. Descriptive statistics and bivariate and multivariate logistic regression analyses were performed to evaluate the measures of informal support and depressive symptoms across various self-management practices.

**Results:** Women receiving assistance from children ( $p < .001$ ) and living with extended family ( $p < .001$ ), reported low prevalence of depressive symptoms. Individuals diagnosed with arthritis ( $p = .020$ ) were more likely than individuals diagnosed with type 2 diabetes ( $p = .10$ ) to report depressive symptoms. Individuals living with a social network member were more likely manage a chronic condition compared to those who live alone.

**Conclusions:** In Barbados, networks centered on children and extended family were associated with low frequency of depressive symptoms. Living arrangements in the Caribbean may play an important role in buffering against depression and improving self-management practices. Multivariate investigation among depressive disorders, chronic disease, and social environment can provide valuable insights into public health interventions in the Caribbean.

## Abstract 1-21

### Factors Associated with Tobacco Use among Rural and Urban Pregnant Women

Katirai WJ, Noland M

**Purpose:** The purpose of this study was to investigate the influences of smoking on rural and urban pregnant women. Knowledge of the adverse effects of smoking on health and subscores from the Health Belief Model (HBM) were explored in relation to the smoking behavior of pregnant women. A secondary purpose was to investigate the accuracy of self-reported smoking behavior during pregnancy using biochemical validation.

**Methods:** The study population included 71 women receiving prenatal care at clinics in rural and urban Kentucky. The number of participants was limited by the high cost of biochemical verification. All participants completed a questionnaire and supplied a saliva sample. The questionnaire consisted of 60 items that included questions about the pregnant woman, her knowledge of the health risks of smoking during pregnancy, the HBM theoretical constructs, and demographics. Chi-square, t-tests, and logistic regression were used to test for statistical significance.

**Results:** Thirty-seven participants (52%) were classified as non-smokers and 34 participants (48%) were classified as smokers. Non-smokers had a significantly larger mean knowledge score ( $p < .05$ ) about the health risks of smoking during pregnancy. In terms of the HBM constructs, smokers showed a much higher mean score ( $p < .001$ ) indicating that they felt less susceptible to the harms of smoking during pregnancy. Using a logistic regression model, barriers represented the only HBM construct that predicted smoking behavior ( $p < .05$ ). The overall smoking deception rate, that is failing to self-report as a smoker, was 5.6%.

**Conclusions:** Smoking during pregnancy continues to be a significant issue for the women in this sample from urban and rural Kentucky. Efforts to educate women about the health risks of smoking during pregnancy should be increased, as pregnancy is a time when women have more frequent contact with a healthcare provider. The HBM could play an important role in assessing the barriers that pregnant smokers are facing.

## **Abstract 1-22**

### **The Role of Telehealth Counseling in Alleviating Barriers to Reception of Mental Health Services in Mental Health Professional Shortage Areas in Rural Texas**

Primm KM, McCord C, Garney W, Garcia K

**Purpose:** Rural areas lack adequate access to mental health services, and evidence suggests that roughly one in four individuals living in rural areas suffer from mental illness or substance abuse problems. Access to mental health services in rural areas is hindered by higher rates of poverty, inadequate housing and transportation, and lower rates of insurance. Telepsychology can be used to increase access to mental health services and decrease these health disparities.

**Methods:** In 2007, the Telehealth Counseling Clinic (TCC), located at the Texas A&M Health Science Center, developed a training model to prepare future psychologists to utilize new technology to provide counseling services to underserved individuals living in Mental Health Professional Shortage Areas in Texas. In 2009, the TCC opened its first remote site in a rural community to deliver telehealth counseling. From 2012-2014, the TCC expanded its services and opened four additional sites in other rural communities.

**Results:** The TCC uses doctoral students in psychology, supervised by licensed staff, to provide mental health counseling via teleconference to clients in five counties in the Brazos Valley region of Texas, allowing clients to receive counseling services at a local community health center or in the privacy of their home. Teleconferencing is achieved via a HIPPA-approved videoconference technology. To date, the TCC has served approximately 600 clients and provided over 5,000 counseling sessions.

**Conclusions:** Telepsychology is one innovation that has been utilized by the TCC as a method to reduce rural health disparities and increase access to mental health services in rural areas. Despite this, rural residents with mental illness might be less likely than their urban counterparts to define themselves as needing care. Thus, use of models similar to that of TCC can be applied in rural settings to expand access to care, but additional mental health awareness campaigns are needed.

## Abstract 1-23

### Applying the Theory of Reasoned Action to Predict the Sleep Outcomes of Employed Adults

Knowlden AP

**Purpose:** Inadequate sleep is a public health epidemic. Insufficient sleep is associated with an increased risk for occupational injuries. Sleep loss impairs psychomotor vigilance and neurocognitive performance. Degradation of cognitive functioning due to inadequate sleep also increases risk of work-based fatalities. Employees with inadequate sleep are more likely to report absenteeism, unintentional sleep during work hours, as well as work-related accidents. The purpose of this research was to develop a theory of planned behavior model to predict the sleep behaviors of working adults.

**Methods:** The model tested the efficacy of the theory of planned behavior constructs of attitude towards the behavior, subjective norms, perceived behavioral control, and behavioral intentions for predicting sufficient sleep behavior. A total of 300 employed adults were sampled from the Southeastern region of the United States. The final model was tested against a priori goodness-of-fit indices of  $\chi^2$  value of  $p > .05$ , GFI  $> .90$ , RMSEA  $< 0.05$ , and NFI  $> 0.90$ .

**Results:** The mean hours of sleep of the sample was 6.69 hours ( $SD = 1.15$ ). Among the sample, 44.7% self-reported falling asleep at least once while working in the past 30 days. Sleep behavior was significantly related to falling asleep while working ( $p < .05$ ). Path analysis suggested the construct of perceived behavioral control and attitude accounted for 37.7% of the variance in behavioral intentions ( $p < .001$ ), while the construct of subjective norms was not significant in predicting behavioral intentions ( $p = .179$ ). Concurrently, behavioral intentions and perceived behavioral control accounted for 49.2% of the variance in sleep behavior.

**Conclusions:** A significant portion of the sample received less than 7 hours of sleep, which is correlated to increased risk of falling asleep while working. The TPB is a robust model which can be used to develop interventions for improving sleep of employees, thereby reducing risk of sleep-related occupational injuries.

## Abstract 1-24

### Religiosity and Sexual Behavior in an Adolescent Population

Young M, Cardenas S, Donnelly J, Kittleson M, Penhollow T

**Purpose:** The purpose of the study was to examine the relationship between religiosity and sexual behavior in an adolescent population.

**Methods:** Participants in the study were 98 male and 89 female adolescents from six New Mexico communities. Participants completed a questionnaire that included demographic items, two measures of religiosity (frequency of worship attendance and degree of religious feeling), and six measures of sexual behavior. Since participant ages ranged from 13-17 it seemed that age might be the variable most likely to distinguish between those who had participated in a given behavior and those who had not participated. Thus, we analyzed the data using logistic regression, controlled for age, and asked the question, *do the religiosity measures make a unique contribution to distinguishing between those who had and those who had not participated in a given behavior?*

**Results:** Age, by itself, was statistically significant in distinguishing between participants and non-participants for all six behaviors among both males and females. When the two religiosity variables were added to the analyses there were substantial increases in the RSq value for all six behaviors for both males (34.1 percentage points) and females (19.5 percentage points). For the 12 analyses, the RSq value when the religiosity variables were included was always over .400, with the lowest value being .412; eight of the values were above .500, with the highest values at .612 and .740. Thus, these seem to be substantial values indicating the ability of the predictor variables to successfully distinguish between those who have and who have not experienced the various behaviors.

**Conclusions:** The two religiosity variables made substantial increases over the ability of age alone to account for differences in adolescents' sexual behavior. These findings may be of value to those working in adolescent sexuality education programming.

## Abstract 1-25

### Why are Women Dissatisfied with Different Contraceptive Methods? Findings from the National Survey of Family Growth, 2011-2013

Thompson EL, Vamos CA, Griner SB, Daley EM

**Purpose:** Approximately 45% of pregnancies in the United States are unintended. A variety of contraceptive methods are available to women to assist in planning and spacing pregnancies. Yet, it is likely that women do not use the same method throughout childbearing years, especially since most methods are reversible. Therefore, there is a need to examine recent rates of contraception discontinuation and dissatisfaction among U.S. women. The purpose of this study was to describe the types of contraceptive methods used and discontinued due to dissatisfaction among U.S. females aged 15-to-44 years. In addition, the main reasons for dissatisfaction with the pill, condoms, IUD, and Depo-Provera were assessed.

**Methods:** Data from National Survey of Family Growth (2011-2013) were examined among females, aged 15-to-44 years ( $n = 5,601$ ). Survey-weighted frequencies described demographics, contraceptive methods used and discontinued due to dissatisfaction, and reasons for dissatisfaction. The number of methods used and discontinued were averaged among contraceptive users.

**Results:** Among this nationally representative sample, 90.0% of women had ever used any type of contraceptive method, and 46.8% had discontinued at least one method due to dissatisfaction. The most common reversible contraceptive method ever used was a condom (92.7%), while 7.6% of these women discontinued use due to dissatisfaction. The average number of reversible methods used was 2.99 (95% CI 3.25-3.40), while the average number of methods discontinued was 1.53 (95% CI 1.48-1.59). Additionally, side effects were reported as the main reason for dissatisfaction among users of the pill, Depo, and IUD, while partner dissatisfaction was the primary reason for discontinuing condoms.

**Conclusion:** Women tend to change contraceptive methods through their lifetime, and reasons for dissatisfaction can vary by method. Healthcare providers should consider the personalized reasons for dissatisfaction with contraceptive methods in order to assist women in choosing the best contraceptive method for their needs and preferences.

## Abstract 1-26

### Results from a Pilot Mindfulness-Based Relapse Prevention Intervention among Those in Recovery from Opioid Use Disorder Receiving Medication-assisted Treatment

Zullig KJ, Lander LR, Sloan S, Brumage MR, Hobbs GR, Faulkenberry L

**Purpose:** Despite evidence of the efficacy of mindfulness as an evidence-based adjunctive treatment for substance use disorders, little research has tested the effectiveness of Mindfulness-Based Relapse Prevention (MBRP) in a naturalistic outpatient setting for those in recovery from opioid use disorder receiving medication-assisted treatment (MAT).

**Methods:** Participants who were in the intermediate stage of recovery from opioid abuse (at least 90 consecutive days clean) were recruited from West Virginia University's Comprehensive Opioid Addiction Treatment Program to participate in an MBRP intervention. In this single group design pilot study, participants served as their own controls [ie, each participant participated in 8 weeks of Treatment as Usual (TAU) with MAT before the 8-week MBRP began]. Preliminary pre/post data analysis utilizing intent-to-treat analysis with study non-completers (ie, participants who did not complete the mindfulness intervention, but remained in treatment as usual, TAU) was performed.

**Results:** Thirty-two participants were recruited (mean age, 36; range 21-47). No significant differences in relationship status ( $p = .76$ ), sex ( $p = .43$ ), education level ( $p = .38$ ), insurance status ( $p = .24$ ), or employment status ( $p = .10$ ) were detected at baseline between the completers ( $n = 5$ ) and non-completers ( $n = 17$ ). Analyses suggest significant reductions ( $p < .05$ ) were observed in reported depression when compared to those in TAU. In addition, significant increases were observed in reported mindfulness ( $p < .05$ ) when compared to those in TAU. Trends in the hypothesized direction were also observed for anxiety ( $p = .17$ ), but no changes were observed for craving ( $p = .43$ ).

**Conclusions:** The study design led to significant attrition. Despite this limitation, the research team successfully demonstrated MBRP can be incorporated into an MAT in an outpatient setting, and significant, positive findings were observed even with a small sample size. In addition, an unexpected finding was that patients in the intermediate phase of MAT still reported clinically significant levels of anxiety and depression that were not reduced in TAU.

## Abstract 1-27

### Factors Associated with Quality of Life in Older Adults Living with HIV

Nguyen AL, McNeil CJ, Rhodes SD

**Purpose:** Quality of life (QOL) is an independent predictor of mortality. For individuals living with HIV, QOL risk factors include depression, neurocognitive deficits, life stress, stigma/discrimination, and physical disabilities. Protective factors include resilience, social support, and positive personal relationships. Purpose in life may be protective for aging-related conditions like dementia. We examined the relationship between QOL and purpose in life in older adults living with HIV.

**Methods:** We conducted cross-sectional analyses of 2013 baseline data of HIV+ individuals ages  $\geq 50$  ( $n = 177$ ) from the community-based cohort of the Rush Alzheimer's Disease Center Minority Aging Research Study. Bivariate analyses and multivariate models examined the relationship between two QOL outcomes (ie, self-reported health status and healthy days index) and risk/protective factors including purpose in life.

**Results:** Mean age of participants was 58.7 years and mean years since HIV diagnosis was 16.9. The majority of participants were male (74.6%), were black (69.5%), and reported undetectable viral loads (94.9%). Self-reported health status was better for Latinos vs. whites ( $p = .05$ ) and nonsmokers vs. ever smokers ( $p < .01$ ). Self-reported health status was associated with purpose in life ( $r = .21, p < .01$ ), drug use ( $r = -.16, p = .04$ ), depression ( $r = -.22, p < .01$ ), disability ( $r = -.36, p < .001$ ), and emotional loneliness ( $r = -.19, p = .01$ ). Race, smoking, purpose in life, and disability remained significant in a linear regression ( $R^2 = .24$ ). Males vs. non-males ( $p = .04$ ) and Latinos/blacks vs. whites ( $p < .05$ ) reported more healthy days. The variable healthy days was associated with depression ( $r = -.42, p < .001$ ), disability ( $r = -.18, p < .01$ ), adverse life events ( $r = -.22, p < .01$ ), and emotional loneliness ( $r = -.30, p < .001$ ). Race, depression, and disability remained significant in a linear regression ( $R^2 = .27$ ).

**Conclusions:** Race, smoking, disabilities, depression, and purpose in life are significantly related to QOL. CD4 count, viral load, and years since HIV diagnosis were not related to QOL, indicating the need to focus on reducing disabilities and promoting psychological health in individuals living with HIV as they age.

## Abstract 1-28

### Online Support for Grief Improves Sleep Quality and Reduces Mental Health Problems in Widow/ers

Knowles LM, Stelzer EM, Jovel KS, O'Connor MF

**Purpose:** Social support and grief education can ameliorate mental and physical health risks in wid-ow(er)s. However, barriers often prevent older individuals from attending support groups. This controlled pilot study examined the feasibility and acceptability of an online, real-time, interactive virtual reality (VR) support group for widow(er)s, and assessed the preliminary efficacy of the VR support group for improving psychosocial outcomes and sleep quality compared to an active control grief education website.

**Methods:** Thirty widow(er)s (Mean age = 67.0,  $SD = 11.0$ ) participated in an 8-week VR support group or accessed a grief education website. Participants completed self-report measures of depression, grief intensity, grief cognitions, yearning, loneliness, perceived stress, and sleep quality at three time points.

**Results:** Participant attrition and self-report indicated that both interventions were feasible and acceptable. Both groups showed significant improvements in grief severity, grief cognitions, yearning, loneliness, perceived stress, and global sleep quality across study time points. However, only widow(er)s in the VR support group showed a significant improvement in depression across time.

**Conclusions:** This study demonstrates the feasibility, acceptability, and preliminary efficacy of an accessible and low-cost online support format for widow(er)s.

## Abstract 1-29

### **Facilitators and Barriers to Use of Pre-exposure Prophylaxis (PrEP) for the Prevention of HIV among Men Who Have Sex with Men (MSM) in Oklahoma**

Hubach R

**Purpose:** HIV transmission can be significantly reduced through comprehensive community-based prevention programs that include holistic behavioral intervention targeting at-risk groups. The purpose of this study was to identify the preferred context and perceived obstacles to PrEP uptake, and other prevention strategies, for urban and rural MSM in Oklahoma. Secondary aims included identification of methods to enhance patient-provider communication around PrEP and routine HIV screening.

**Methods:** We used a grounded theory design and recruited 25 MSM residing in rural and urban areas in Oklahoma for in-depth qualitative interviews. Utilizing an inductive approach, we explored patterns of sexual relationships, sexual partner-seeking behavior, determinants of sexual risk, attitudes towards PrEP, and facilitators and barriers to PrEP uptake.

**Results:** Structural issues, including lack of comprehensive sexual health education, within the state of Oklahoma were noted. In particular, participants indicated they utilized both social and sexual networking sites (eg, Facebook, Grindr) as a method to acquire sexual health-related information. Low perception of HIV risk meant few participants saw themselves as PrEP candidates. PrEP emerged as a contentious issue because of a lack of desire to discuss their sexual behavior or sexual orientation with their medical practitioners, fearing rejection from a provider. Specifically, rural participants noted the lack of providers within their areas and numerous barriers to accessing medical specialists within larger metropolitan areas. Many participants viewed PrEP as problematic because they perceived themselves as more willing to engage in condomless sex in an effort to increase sexual pleasure.

**Conclusions:** Geographic isolation limits access to health and social service providers that support sexual health for Oklahoma MSM. Interventions are warranted which increase patient-provider communication regarding sexual health and behaviors. Findings suggest the tailoring or development of behavioral interventions specific to MSM in Oklahoma at the individual and group level, with an emphasis on rural populations.

## Abstract 1-30

### “It’s Just Like Riding a Bicycle”: Understanding Women’s Postpartum Sexual Experiences

DiMaria AL, Delay C, Sundstrom B, Rehberg AL, Avina A

**Purpose:** Women experience many barriers (eg, psychological, physiological, fatigue, mode of delivery) when resuming sexual behaviors during the postpartum period. Despite extensive clinical and survey literature on the topic, there is limited qualitative research exploring women’s knowledge, attitudes, and decision-making related to the topic. The purpose of this study was to understand women’s reproductive health experiences, with a specific focus on knowledge, attitudes, and norms related to returning to sexual behavior during the postpartum period.

**Methods:** Researchers conducted 69 semi-structured, in-depth, oral history interviews with women ages 18 years and older living in the central and lowcountry regions of South Carolina. Interviews lasted approximately 90 minutes and were conducted by members of an interdisciplinary research team. Data analyses were completed using HyperRESEARCH 3.7.2.

**Results:** Emerging themes included: 1) fatigue; 2) pain/soreness; 3) psychological barriers; 4) libido/desire; 5) pleasure/satisfaction; and 6) following doctor’s orders. Regarding the latter, women revealed clinicians were most influential as to when they should and could resume sexual activity. Some women noted returning back to sex earlier than anticipated due to personal and partner desire, and some women even indicated achieving great sexual satisfaction during the postpartum period.

**Conclusion:** Findings from this study provide practical recommendations for health care and public health professionals to further develop effective and timely health messaging related to safe and healthy postpartum sexual behaviors. More specifically, it is recommended that conversations on the topic be initiated prior to the six-week postpartum clinical visit and that campaigns be developed to bring further awareness to, and information on, the topic.

## Abstract 1-31

### **Integrating Behavioral Health Treatment with HIV Testing and Aftercare Services: A Preliminary Analysis**

Kissell KM, Gaddis R, Williams J, Ford JA

**Purpose:** Individuals with mental health or substance use disorders (SUD) have reduced access to HIV care and adherence to HIV treatment. The Integrated Continuum-of-Care Services (ICS) project was designed to identify individuals at high risk for SUD, mental illness, or a co-occurring disorder and link them to services including behavioral health treatment, HIV/Hepatitis testing, and aftercare services, in a co-located environment.

**Methods:** HIV testing events were held at local urban housing complexes where individuals could be screened for substance use, mental health disorders, and HIV/Hepatitis C risk factors. Additionally, individuals could be screened and tested at the program's clinical office, the Consumer Advocacy Model. Screened individuals were offered services including: HIV/Hepatitis testing and counseling, SUD and/or mental health treatment, HIV prevention education, group and/or individual counseling, case management, and other recovery support options. The breadth of services utilized was defined by each individual. Outcome measures, including substance use, level of depression, and overall satisfaction with life, were obtained from self-reported data at baseline and six-month follow-up.

**Results:** The ICS project has screened and tested 524 individuals. Of those screened, 60% screened positive for needing behavioral health treatment and 50% indicated having risk for HIV and/or Hepatitis C. For those engaging in treatment services or prevention education, paired samples t-tests indicated statistically significant reductions in alcohol and drug use, decreases in depression levels, and an increase in participants' overall satisfaction with their life ( $p$ -values < .05).

**Conclusions:** The ICS program is positively affecting the lives of its participants. Individuals at high risk for SUD, mental health disorders, and/or HIV were linked to a variety of services and demonstrated significant reductions in their substance use and improvements in mental health. In an effort to reach more individuals and add additional services to the program, a syringe exchange program is being added beginning in 2017.

## Abstract 1-32

### Effects of a Teen Pregnancy Prevention Intervention on Youth Living in Group Care Homes: Results of a Cluster Randomized Controlled Trial

Oman RF, Vesely SK, Green J, Clements-Nolle K, Lu M

**Purpose:** Youth living in group care homes are significantly more likely to initiate sexual intercourse at a young age, are less likely to use birth control, and have significantly higher rates of pregnancies and repeat pregnancies compared to national population estimates. This study's purpose was to determine whether the Power Through Choices (PTC) intervention reduced unprotected sexual intercourse and pregnancy among system-involved youth living in group care homes.

**Methods:** The PTC intervention consists of ten 90-minute sessions delivered twice per week to groups of 6 to 20 youth. The study design was a two-arm (PTC intervention or usual care) cluster randomized controlled trial (RCT) involving group care homes ( $n = 80$ ) located in 3 states and operated by the child welfare or juvenile justice system. Assessments were conducted via self-administered questionnaires at pre, post, and 6 and 12 month follow-up. Logistic regression models, controlling for demographic and relevant baseline variables, were utilized to compare behavioral outcomes at 6 and 12 months.

**Results:** Participants ( $N = 1,036$ ) were young (mean age = 16.1 years), predominantly male (79%), and racially/ethnically diverse (37% Hispanic, 21% white, 20% black, 17% multiracial). Most youth (88%) reported that they had sexual intercourse and 38% had sex in the past three months. Greater than half (55%) did not use any birth control and 60% did not use a condom at last sexual intercourse. At 6-month post intervention participants in the intervention group had significantly lower odds of having recent sexual intercourse without using birth control (OR = 0.72; 95% CI, 0.52-0.98) compared to participants in the control group. At 12-month assessment participants in the intervention group had significantly lower odds of ever being pregnant/getting a female pregnant (OR = 0.67; 95% CI, 0.46-0.99).

**Conclusions:** The results suggest that PTC is an effective sexual health education intervention that can be implemented in a group care setting with a sexually experienced multi-racial youth population.

## Abstract 1-33

### Differences in HIV Testing during Primary Care Visits among Patients Seen by Assigned vs. Unassigned Providers

Ford CL, Hechter RC, Luo Y, Cunningham WE, Grotts JF, Takahashi LM, Nyamathi AM

**Purpose:** The Centers for Disease Control and Prevention (CDC) recommends adults undergo human immunodeficiency virus (HIV) testing during their regular primary care visits. Patients who have an assigned primary care provider (PCP) may be seen by their assigned provider or another (ie, unassigned) one, but how this influences HIV testing during the visit is not known. We examined whether patients seen by an unassigned PCP during an index primary care visit have lower odds of HIV testing than those seen by their assigned PCP.

**Methods:** The sample ( $N = 1,627,642$ ) included all adult enrollees of a large managed care organization in southern California who had a primary care visit in 2012. Exclusion criteria were any pregnancy or gap in healthcare coverage in the prior 12 months, and any prior HIV diagnosis. We linked patients' electronic medical records, lab data on HIV antibody assays, and detailed files on each patient's assigned PCP and visit-specific PCP. Using random-effects logistic regression, we estimated the odds of HIV testing during an index primary care visit among patients seen by assigned vs. unassigned PCPs, controlling for patient factors, provider demographics, and facility characteristics.

**Results:** Only 5.3% ( $n = 86,339$ ) of the diverse sample (55.7% female; 40.8% white, 34.2% Latino, 9.9% black, 15.2% other race/ethnicity) underwent HIV testing during the primary care visit. As hypothesized, patients seen by an unassigned PCP had significantly lower odds of visit-specific HIV testing [odds ratio (OR) = 0.67, 95% confidence intervals (CI): 0.66-0.69] than those seen by an assigned PCP. Even more pronounced disparities were apparent in analyses among black (OR = 0.47, 95% CI: 0.35-0.64) and Latino (OR = 0.52, 95% CI: 0.43-0.63) patients.

**Conclusion:** Patients seen by unassigned PCPs had lower odds of HIV testing. The strategies used to promote HIV testing during visits with assigned PCPs may be less effective for patients seeing unassigned PCPs.

## Abstract 1-34

### **Transforming Teen Pregnancy Prevention with Innovative Teen Pregnancy Prevention Programs (iTP3)**

Muraleetharan D, Garney W, Wilson K, Farmer J, McLeroy K

**Purpose:** The purpose of this study is to examine an innovative approach to teen pregnancy prevention (TPP) for populations with the greatest need. Although teen pregnancy rates overall have dropped, rates among certain subpopulations remain elevated. For this reason, personalized methods that go beyond the traditional, classroom-based interventions are needed. The goal of Innovative Teen Pregnancy Prevention Programs (iTP3) was to select a portfolio of TPP programs that could effectively reach vulnerable populations through new levels of intervention, locations for delivery, or other innovative factors, then provide capacity building assistance (CBA) to advance programs through stages of program development.

**Methods:** Evaluators used a collaborative evaluation framework to track performance measures and short-term outcomes related to changes in capacity. A baseline survey and intake interview were used to assess initial capacity to develop an innovative TPP program. Then, an activity reporting database was used to track monthly progress and successes.

**Results:** iTP3 recruited 15 innovators that serve diverse subsets of vulnerable populations including youth that are homeless, LGBTQ-identified youth, and other priority populations. Most innovators were deemed to have high capacity to implement their proposed program, but will be provided CBA. Innovators created programs for 10 different setting types with the majority of programs operating in out of school time/community-based settings. Innovators conducted target population assessment activities that included working with 58 youth, and organizational community advisory group meetings with 24 adults.

**Conclusions:** To measure effectiveness of the innovative programs, evaluators continue to collect data and report on process and outcome measures. Over the next 10 months, the iTP3 project will work to ensure the creation of a portfolio of progressive TPP programs that personalizes care to vulnerable populations. Additional qualitative and quantitative assessments will be conducted in the future to provide context to the development process of the innovative programs.

## Abstract 1-35

### Differences in HIV Testing Behavior during Primary Care Visits Based on Private vs. Public Insurance Status

Chandanabhumma PP, Ford CL, Tseng CH, Grotts JF, Wilhalme H, Luo YX

**Purpose:** This study applies the Behavioral Model for Vulnerable Populations to understand whether the type of health insurance a patient has influences the likelihood of receiving CDC-recommended HIV testing during primary care visits among insured patients with assigned healthcare providers.

**Methods:** This was a cross-sectional, multi-level analysis of adult primary care patients with assigned providers in a southern California managed care organization during the 2008-2012 period. Our inclusion criteria were  $\geq 18$  years of age,  $\geq 1$  primary care visit with an assigned provider, healthcare coverage for the past 12 months, no prior HIV diagnosis, and no pregnancy. Patient electronic medical records were linked with Census and demographic information. Using multivariable, random-effects logistic regression, we examined whether the likelihood of receiving an HIV test during the visit varied based on patient's insurance type, controlling for patient socio-demographic and clinical factors, provider socio-demographic factors, and clinic and neighborhood characteristics.

**Results:** Of the 3,476,755 patients (54.8% female; 38.3% non-Hispanic whites; 13.1% Spanish-speaking), only 6.12% ( $n = 212,685$ ) received an HIV test during their visit. Adjusted for other co-variables, the odds of receiving an HIV test among patients with Medicaid were about 15% lower than the odds among patients with private insurance [odds ratio (OR) = 0.854, 95% confidence intervals (CI): 0.828-0.881]. The adjusted odds of receiving an HIV test were 35% lower among patients with Medicare than the odds among patients with private insurance [OR = 0.655, 95% CI: 0.631-0.68].

**Conclusions:** Primary care patients with assigned providers who have Medicare and Medicaid have lower odds of HIV testing than those who have private insurance in this socially diverse managed care population. HIV preventive services offered to primary care patients may differ based on the patient's insurance type. The disparity by Medicaid is concerning as HIV prevalence may be elevated among socially vulnerable populations.

## Abstract 1-36

### **Analyzing the Influence of Healthcare Provider Factors on Contraceptive Behaviors among Graduate-level College Females**

Hays CN, Wilson KL, Davis CG, Ji MY, Rahn RN

**Purpose:** The purpose of this study was to analyze the influence of healthcare provider factors on contraceptive behaviors among graduate-level female students in a pilot study.

**Methods:** During the summer of 2014, a random sample of 300 graduate female students received an email to complete an online survey, which examined contraceptive behaviors, attitudes, beliefs, and factors related to healthcare providers' influence on contraception use. In total 68 students completed the survey, for a 22.6% response rate. Data were analyzed using correlations to identify healthcare provider influences on contraceptive behaviors among the participants.

**Results:** Participant ages ranged from 22 to 46 years. Approximately 69% of participants had ever been sexually active. Of those, 61.7% had engaged in unprotected sex at least once and 42.6% had experienced an unintended pregnancy scare. Among all participants, 67.6% discussed contraception use with a healthcare provider. Participants' embarrassment over discussing contraception was positively correlated with actually discussing contraception use with healthcare providers. Additionally, if participants believed their healthcare provider approved of contraception use, they were more likely to talk to their healthcare provider about contraception, more likely to use contraception, and less likely to have unprotected sex.

**Conclusions:** Results of this study indicate participants' healthcare providers approve of contraception use. Other studies indicate more educated people are more likely to talk to their healthcare providers about the use of contraception. As the participants in this study were graduate students, they were more likely to be older, and were more educated; thus, more likely to talk to their healthcare providers. The full study will include undergraduate students, providing a comparison of friendliness of healthcare providers for undergraduate college-age individuals versus graduate school-age individuals. By understanding contraceptive attitudes, beliefs, and behaviors, health practitioners can incorporate females' unique personal characteristics during the process of contraceptive counseling to prescribe the most effective contraceptive method that meets their specific needs.

## Abstract 1-37

### Impact of Self-Concept on Suicidal Behaviors in Youth

Bartsch LA, King KA, Vidourek RA, Merianos AM

**Purpose:** Youth suicide is in the top leading causes of death among adolescents and remains an important public health issue for health professionals today. Although much research has examined mental health risk factors for suicide like depression and other mental health disorders, few have examined a more intrapersonal form of mental health, an individual's overall self-concept. The primary aim of this study was to investigate the impact of self-concept on suicidal ideation and suicide attempts across three grade levels.

**Methods:** Secondary data analysis was conducted using the National Longitudinal Study on Adolescent to Adult Health (Add Health). All participants were in grades 7-12 ( $N = 6,504$ ) and completed a computer assisted in-home interview.

**Results:** A total of 12.8% of youth reported suicidal ideation and 3.5% reported attempting suicide in the past 12 months. Overall, suicidal ideation increased with age whereas suicide attempts were consistent across the three groups. Female youth were significantly more likely than male youth to experience both suicidal ideation and suicide attempts. Youth with a low self-concept were at increased odds for suicidal ideation and suicide attempts regardless of sex, race, or grade. Interestingly, the impact of self-concept on suicidal ideation noticeably increased with increased grade level. Odds ratios for suicidal ideation among those with low self-concept were 2.8 (at 7th/8th grade), 3.5 (9th/10th grade), and 4.4 (11th/12th grade). The impact of self-concept on suicide attempts did not increase but rather remained consistently high across the three age groups.

**Conclusions:** Future research is needed to explain reasons for the pronounced impact of self-concept on suicidal ideation with progressing age. Results from this study support the need for incorporating self-concept into suicide prevention efforts for youth.

## Abstract 1-38

### **Trends in Long-acting Reversible Contraceptive (LARC) Use, LARC Use Predictors, and Dual Method Use among a National Sample of U.S. College Women**

Buhi ER, Helmy H

**Purpose:** Long-acting reversible contraceptives (LARC) are highly efficacious and cost-effective, but little is known about LARC use trends and predictors of use among college women. Further, concerns have been raised about the impact of LARC on condom use and subsequent effects on sexually transmitted infection rates.

**Methods:** We analyzed national data from the American College Health Association-National College Health Assessment II to assess trends in LARC and other contraceptive use, identify predictors of LARC use, and examine relationships between hormonal/LARC method use and condom use among female U.S. college students. Participants included four waves of students (2011-2014), aged 18-24 years, who reported having vaginal sex ( $N = 37,899$ ).

**Results:** We found increases in LARC use and usage of condoms, and decreases in use of birth control pills and patches, shots, or rings at last vaginal sex. Hormonal implants are primarily driving the increase of LARC, rather than IUDs, across the four survey cycles, and black females are primarily driving increases in implant usage. Being older, black, Hispanic/Latina, American Indian/Alaska Native/Native Hawaiian, biracial, in a relationship and living together, or a student at a two-year school were related to LARC use. Students reporting LARC use at last vaginal sex had lower odds of condom usage, compared with non-LARC hormonal method users.

**Conclusions:** We observed several important shifts, over a four-year period, in the proportion of U.S. college women using contraception. Our analysis of LARC use predictors and dual LARC/condom use has important and timely implications for research and sexual and reproductive health promotion practice.

## Abstract 1-39

### Too Much of a Good Thing? Curvilinear Relationship between Positivity and Emotional Functioning in Adolescent Females

Steinhardt MA, Lehrer MH, Janus KC, Gloria CT

**Purpose:** Increased positivity – the ratio of one’s experienced positive to negative emotions – is related to superior emotional functioning. Conversely, experiencing too few and/or dysregulated positive emotions is linked with poor emotional functioning (eg, depressive symptoms, perceived stress). However, recent adult research found a nonlinear relationship between positivity and emotional functioning; specifically, positivity rising unabated without appropriate increases in negativity is associated with diminished functioning (ie, a U-shaped quadratic curve). Consequences of excessive positivity have not been examined in adolescents. This study investigated the association between positivity and emotional dysfunction (depressive symptoms, perceived stress) in adolescent females. We hypothesized a quadratic regression equation would account for more variance in the relationship between positivity and emotional dysfunction than a linear equation.

**Methods:** Participants ( $n = 510$ ) attending an all-girls public school completed the Modified Differential Emotions Scale assessing positive/negative emotions. Emotional dysfunction was assessed by the Center for Epidemiologic Studies Depression Scale and the Perceived Stress Scale. Hierarchical regression models tested the relationship between positivity and the emotional dysfunction variables (depressive symptoms and stress), comparing model fit of a linear equation at step one to a quadratic equation at step two.

**Results:** The associations between positivity and emotional dysfunction were best characterized by a quadratic equation compared to a linear equation for both depressive symptoms ( $R^2$  change = .15,  $p < .001$ ) and perceived stress ( $R^2$  change = .09,  $p < .001$ ), indicating increased emotional dysfunction at the highest levels of positivity. These quadratic curves were U-shaped, illustrating that both depressive symptoms and stress decreased then increased as positive emotions outpaced negative emotions at elevated frequencies.

**Conclusions:** These results challenge the “more is better” assumption commonly associated with positivity. Interventions that increase experiences of positive emotions and/or decrease experiences of negative emotions—up to a point—promote emotional functioning among female adolescents.

## Abstract 2-1

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

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

**Purpose:** The purpose of this study was to 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 behavior 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 and 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 topics 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.

**Conclusions:** 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.

## Abstract 2-2

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

Walsh-Buhi ML, Schoonhoven Scott D

**Purpose:** Child abuse is a public health crisis. A multitude of studies indicate childhood trauma, such as abuse and neglect, causes 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 involves simulations, still new in child welfare but which have been used successfully in the medical field and by the military.

**Methods:** 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.

**Results:** Our presentation reviews 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 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.

**Conclusions:** 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.

## Abstract 2-3

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

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

**Purpose:** 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 (ie, turkers) to complete tasks in very short time. The aim of this study was 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 (ie, percent of receipts with all turkers agreeing) and almost-perfect agreement rate (ie, percent of receipts with just one turker disagreeing) were 90.8% and 89.2%, respectively, for restaurant name (eg, Burger King, McDonald’s), 75.5% and 23.0% for beverage inclusion, 69.2% and 23.1% for hot beverage (eg, hot coffee, hot tea), and 51.0% and 36.0% for cold beverage (eg, 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.”

**Conclusions:** Our findings indicated that inter-rater agreement was reasonably high for questions at different difficulty levels (eg, 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.

## Abstract 2-4

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

Bhochhibhoya AK, Branscum PW

**Purpose:** It is well established that international students have distinctive types of social and educational experiences and a higher level of distress compared 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). The purpose of this study was to explore the role of Type D personality towards health behaviors among international students in the United States.

**Methods:** A sample of 328 international students (females = 180, males = 148) participated in this study. An independent t-test was utilized to compare mean differences among groups (Type D/NA versus Non-type D/NA and Type D/SI versus 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 compared to Type D/NA. Similarly, stress ( $p < .001$ ,  $d = 1.29$ ), smoking ( $p = .008$ ,  $d = 0.41$ ), and alcohol use ( $p = .23$ ,  $d = 0.25$ ) were also higher for Type D/NA groups. Similarly, vigorous physical activity ( $p = .008$ ,  $d = 0.30$ ), moderate physical activity ( $p = .011$ ,  $d = 0.28$ ), 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 compared to Non-type D/SI groups. However, smoking ( $p = .067$ ) and alcohol use ( $p = .847$ ) 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 are discussed.

## Abstract 2-5

### 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:** The purpose of this study was 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 path. 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 increase in suicide-related word search activity.

**Conclusions:** Academic pressure appears to be the largest contributor to Korean adolescents' suicide risk. A real-time suicide-related word search activity monitoring and response system needs to be developed.

## Abstract 2-6

### **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

**Purpose:** 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. The aim of this study was to assess whether children who have fly ash in their home perform more poorly 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.

## Abstract 2-7

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

McClendon ME, Umstatted Meyer MR, Bridges CN

**Purpose:** 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. 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 1,619 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.

## Abstract 2-8

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

Conrad E, Knowlden A

**Purpose:** The purpose of this review was 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, and 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 settings for the interventions were schools ( $n = 6$ ), an afterschool program ( $n = 1$ ), a 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.

## Abstract 2-9

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

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

**Purpose:** 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.

**Methods:** 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.

**Results:** 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%) or 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.

**Conclusions:** 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.

## **Abstract 2-10**

### **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

**Purpose:** 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.

## Abstract 2-11

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

Merten JW, King Jessica

**Purpose:** The purpose of this study was 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-related 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.

## Abstract 2-12

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

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

**Purpose:** 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.

**Methods:** In 2010, 3,257 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 ( $\beta = .06, p < .001$ ), which was related with regular PA ( $\beta = .11, p < .001$ ), and regular PA was related with quality of life ( $\beta = .14, p < .001$ ).

**Results:** 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.

## Abstract 2-13

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

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

**Purpose:** 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. 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 from January 2002 to the present based on the following inclusion criteria: conducted in the United States, 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 were 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 the postpartum period.

**Conclusions:** Current evidence demonstrates success in reducing gestational weight gain that persists in keeping weight off 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 (ie, culturally tailored approaches).

## Abstract 2-14

### A Novel Approach to Reduce Metabolic Syndrome Risk

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

**Purpose:** 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 were extracted for patients with a BMI  $\geq 30$ , those following behavior change guidelines to control uric acid, and those who 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.

## Abstract 2-15

### Multi-theory Model-based Determinants of Obesity Prevention Behaviors in Men

Knowlden AP

**Purpose:** 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 preventive 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:** A majority of the sample ( $n = 311$ ) consumed 3 or more large-portion meals per day. For this behavior, behavioral confidence was the most important factor 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 represented the most important factor 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—which is the amount recommended for those within overweight/obese categories. For this outcome, behavioral confidence was the most important factor for initiation while emotional transformation was the most important for sustenance.

**Conclusions:** 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.

## Abstract 2-16

### **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 wellbeing 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 wellbeing 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 less in maladaptive coping strategies (eg, self-blame) at post-test ( $p < .001$ ). Participants also reported improvement in their physical and emotional wellbeing throughout the program.

**Conclusions:** The MYT program had a positive impact on the psychological, emotional, and physical wellbeing 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.

## Abstract 2-17

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

Knowlden AP

**Purpose:** The purpose of this study was to systematically evaluate the efficacy of electronically-delivered overweight/obesity treatment interventions targeting middle-aged men. More than 71% of men in the United States are overweight or obese. 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 (eg, 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. The search was limited 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 randomized controlled trial designs. Most interventions were based on behavioral theory ( $n = 7$ ), but only three operationalized the constructs from the applied theories. Recruitment occurred at universities ( $n = 1$ ), at work sites ( $n = 2$ ), in 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.

## Abstract 2-18

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

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

**Purpose:** 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.” 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,  $n = 7$ ) groups. The CG continued current exercise habits. The 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 the TF20 group.

**Results:** Ten male recruits ( $23 \pm 2.7$  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 the 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.

**Conclusions:** Participants in the 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 the TF20 program was developed by firefighters for firefighters, it offers a promising method of fitness training, although intervention delivery is crucial for success.

## Abstract 2-19

### 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:** The purpose of this study was to examine whether type 2 diabetes (T2D) familial risk profiles, such as severity of a relative's T2D and 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 ( $SD = 1.3$ ), a 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 having, on average, 2 relatives with T2D. 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, a greater number of family members with T2D was associated with T2D risk perception ( $B = 6.10, \beta = .211, p < .001$ ).

**Conclusions:** 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 relatives' 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.

## Abstract 2-20

### **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 whether 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 old 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% met the recommendation 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 simultaneously or sequentially, and how to stress the importance of physical activity for overall health.

## Abstract 2-21

### 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 United States. 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 ( $B = 10.12, \beta = .18, p = .023$ ), having a relative with severe T2D ( $B = 23.55, \beta = .17, p = .022$ ), and having 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 ( $B = .180, \beta = .195, p = .014$ ), or a relative with severe T2D ( $B = .74, \beta = .25, p = .001$ ) were each significantly associated with vegetable consumption. However, there was no association between perceived risk and engaging in protective health behaviors.

**Conclusions:** Only actual risk (familial risk profile) was associated with practicing health protecting behaviors. Perception 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 when a first degree relative had 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.

## Abstract 2-22

### 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 on 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 a 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 implementation within diverse populations and clinical settings.

## Abstract 2-23

### 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 ( $p < .001$ ), 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 ( $p < .001$ ), 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.

## Abstract 2-24

### 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 whether 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; with a baseline mean age of 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 (ie, 2, 3, or 4 assets versus 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 better understand the inconsistent results and, in particular, why some assets are negatively associated with PA.

## Abstract 2-25

### 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 U.S. 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 versus 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 ( $t = 1.04$ ,  $p = .30$ ) for HE opportunities and 2.40 points ( $t = -1.11$ ,  $p = .27$ ) lower for PA opportunities compared to high- and medium-income block groups. Intervention status was not associated with scores for PA ( $p = .09$ ) or HE ( $p = .41$ ) 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.

## Abstract 2-26

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

Patterson MS, Gagnon L, Goodson P

**Purpose:** 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 assess 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 ( $R^2 = .091$ ,  $F = 6.694$ ,  $df = 202$ ,  $p < .001$ ) suggest that body dissatisfaction ( $\beta = .440$ ,  $t = 6.37$ ,  $p < .001$ ) and physical activity participation ( $\beta = .217$ ,  $t = 3.59$ ,  $p < .001$ ) predicted CE, and that 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.

**Conclusions:** 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.

## Abstract 2-27

### "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 (PA), 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 takeout 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) were 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 because of the increase in instant streaming devices and platforms, consideration for the health consequences of binge TV watching should be considered.

## Abstract 2-28

### 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, Nelson JL, Morehead TP, Bernhart JA, Bridges C

**Purpose:** 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 (eg, 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.

**Methods:** 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 were 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 1,743 daily surveys.

**Results:** 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 ( $\beta = .60$ ).

**Conclusions:** 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 (eg, 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 include environmental change (providing sit-stand/standing desks) and behavioral intervention strategies, specifically addressing TPB constructs.

## Abstract 2-29

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

Wang C, Kaigang L

**Purpose:** The purpose of this study was 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 to determine whether the associations vary by age, gender, and race/ethnicity.

**Methods:** Data from the 2013 Youth Risk Behavior Survey (YRBS) ( $n = 13,583$ ) were 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), not be physical active (AOR: 1.7; 95% CI: 1.5-1.8), watch television (AOR: 2.3; 95% CI: 2.1-2.6), and get insufficient sleep (AOR: 1.6; 95% CI: 1.4-1.89), controlling for age, gender, and race/ethnicity.

**Conclusions:** Excessive video-game playing was associated with many health-risk behaviors among youth in the United States. 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.

## Abstract 2-30

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

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

**Purpose:** 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. 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 (ie, 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 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 (ie, a 2.3% reduction in person-level error variance), and a modest relationship between greater stress and less SB (ie, 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 should 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.

## Abstract 2-31

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

Nolan R, Umstatted 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.

**Methods:** This study used a non-experimental, cross-sectional design. The RALPESS was administered across 19 rural cities within Oklahoma. 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. 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.

**Conclusions:** 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.

## Abstract 2-32

### Correlates of Advance Care Discussions among HIV Patients, Their Caregivers, and Physicians

Knowlton A

**Purpose:** With highly active antiretroviral therapy (HAART) and increasing AIDS survival and disability, informal (unpaid) HIV caregivers play a growing role in the wellbeing 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.

**Methods:** The present study sought to identify correlates of HIV patients' reports of having discussed advance care preferences with their doctor.

**Conclusions:** 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.

## Abstract 2-33

### **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, 1,006 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.

## Abstract 2-34

### **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

**Purpose:** 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. 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 (eg, 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 among 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 (eg, 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.

## Abstract 2-35

### **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

**Purpose:** 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). 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:** 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 are 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.

## Abstract 2-36

### 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) is becoming 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 possible 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 exercise ( $d = -.381$ ), 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 in the alleviation of this stigma and promote receiving effective treatment for PTSD.

## Abstract 2-37

### 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, the purpose of this research is to focus on identifying the time spent on physical activity and sport event participation by NSG participants. More specifically, we sought 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, the over 65 age group ( $M = 3.97$ ,  $SD = 2.78$ ) showed significantly higher participation rates than those 51 to 64 [ $M = 2.67$ ,  $SD = 1.32$ ];  $t(305) = -4.969$ ,  $p < .001$ ]. For exercise hours per week, the over 65 age group ( $M = 6.30$ ,  $SD = 4.50$ ) also showed significantly higher participation than the 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 events showed higher exercise time spent as they age. NSG participants also showed that the average exercise hours per week was more than twice the 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 males. Encouraging older adults to participate in sports events may help them achieve a healthy life style.

## Abstract 2-38

### **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; however, 2) 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.

## Abstract 2-39

### Neighborhood Social Cohesion and Leisure-time Physical Activity among Older Adults

Yu CY, Lin HC

**Purpose:** 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,  $p < .01$ ; older: standardized coefficient = 0.050,  $p < .05$ ), 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,  $p < .05$ ).

**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.

## Abstract 2-40

### 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 of/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 ( $p > .05$ ). Significant improvements were found for balance and mobility (TUG:  $-0.4 \pm 0.1$ sec,  $t = 2.45$ ,  $p = .05$ ) and carrying a weighted object (LC:  $-1.7 \pm 0.2$ sec,  $t = 3.83$ ,  $p = .009$ ).

**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.

## Abstract 3-1

### Confidence to Prevent and Manage Falls among Community-dwelling Older Adults: Scale Validation and Mediation

Yoshikawa A, Smith ML, Towne SD, Ory MG

**Purpose:** Reducing fear of falling (FOF) and improving confidence to prevent and manage fall risk (CPMFR) is an essential part of aging-in-place and maintaining an active lifestyle among older adults. Improving CPMFR is theorized to mediate the effect of FOF on functional mobility, yet its psychometric dimensionality is understudied. This two-part study: 1) examined the psychometric properties of the CPMFR scale and validated its construction (six items); and 2) tested the mediation effect of CPMFR between FOF and functional mobility.

**Methods:** Data were analyzed from 446 participants (89 men, 357 women: mean age of 77.6 [SD = 8.3] years) enrolled in a fall prevention program, A Matter of Balance Lay Leader Model. Self-reported FOF, CPMFR, and demographic information were collected using questionnaires. Functional mobility was assessed objectively using the Timed Up-and-Go (TUG) test. Confirmatory factor analysis and structural equation modeling were performed to validate the CPMFR scale and examine the mediation effect of CPMFR between FOF and functional mobility.

**Results:** The CPMFR dimension was defined by participants': 1) physical functioning, 2) walking ability, and 3) fall management ( $\chi^2(6) = 23.82, p < .05$ , RMSEA = 0.08, CFI = 1.00, WRMR = 0.36). In mediation modeling, associations were observed between FOF and CPMFR ( $\beta = -0.57, p < .05$ ) and between CPMFR and functional mobility ( $\beta = -0.46, p < .05$ ). Consequently, the direct effect of FOF on functional mobility vanished ( $\beta = 0.01, p > .05$ ). Confidence with maintaining balance while walking and walking outdoors exhibited the strongest association with CPMFR ( $\beta = 0.92, p < .05$ ).

**Conclusions:** This study provides evidence that this previously untested scale can be used by practitioners to evaluate confidence to prevent and manage fall risk among older adults. Further studies about the CPMFR dimension can help program implementers enhance confidence among older adult participants to diminish FOF and promote active lifestyles.

## Abstract 3-2

### Treadmill versus Outdoor Running Injuries Presenting to United States Emergency Departments

Al-Suqi SM, Rossheim ME

**Purpose:** Running is one of the most common physical activities. However, limited research has compared injuries obtained from running in different settings. The current study compared injuries obtained from running outdoors, on a treadmill, and on a track.

**Methods:** National Electronic Injury Surveillance System (NEISS) data from 2015 were used to identify emergency department injuries from running outdoors, on a treadmill, and on a track. Estimates were weighted to be nationally representative. The mean age for treadmill runners was 39, for track runners it was 16, and for outdoor runners it was 37. The overall mean age was 31.

**Results:** The majority of overall running injuries were sprains and strains (67%). Running injuries most commonly afflicted the lower extremities: ankle/foot (28%) and leg/knee (24%). Outdoor running caused a substantially greater proportion of face, head, and neck injuries (11%), compared to running on a treadmill (2%) or track (0.5%). Also, 12% of outdoor running injuries were to the upper trunk, comparison to 8% from running on a treadmill and only 1% of injuries from running on a track.

**Conclusions:** Outdoor running was associated with greater risk in injuring the upper body. Further, a greater number of overall injuries and injuries to the head, neck, and face occurred while running outdoors. Additional research is needed to compare injury risk from running in different environments.

### Abstract 3-3

#### Trends in Spatial Correlates of Fall-related Hospitalizations and Resource Allocation for Older Adults

Towne SD, Ory MG, Li Y, Quinn C, Howell DA, Smith ML

**Purpose:** 1-in-3 older adults suffer potentially preventable falls annually. We aimed to identify geospatial correlates of 1) areas with gaps in the delivery of community- and evidence-programs (EBP) targeting fall prevention in older community-dwelling adults, and 2) areas with high rates of fall-related hospitalizations—hotspots.

**Methods:** Multiple datasets including the Texas Inpatient Hospital Discharge (2012-2014), Texas EBP Survey (2012-2014), US Census, and the NCHS 2013 Urban-Rural Classification Scheme data were used to assess county-level ( $n = 254$ ) outcomes in Texas. Binary logistic regression was used to model 1) hotspots of fall-related hospitalization—defined as counties with high ( $>$  upper-quartile) fall-related hospitalizations among older adults (65+), and 2) access to evidence-based fall prevention programs—defined as having an EBP (A Matter of Balance) delivered at least once during the year in a county.

**Results:** Counties that were hotspots for fall-related hospitalization numbered 64 in 2012, 64 in 2013, and 62 in 2014. Counties with at least one EBP numbered 84 in 2012, 92 in 2013, and 90 in 2014. Factors consistently associated with gaps (absence) in delivery of EBPs included being outside of large metropolitan areas (ie, small metropolitan, micropolitan, rural-noncore;  $p < .001$ ), having fewer older adults ( $p < .01$ ; at/below lower quartile) compared with the highest (above the upper quartile), and not being a fall-related hospitalization hotspot area ( $p < .05$ ). Factors consistently associated with the presence of fall-related hospitalization hotspots included being in a large metropolitan area ( $p < .05$ ) versus a rural-noncore area, being an area with fewer older adults ( $p < .01$ ; at/below upper-quartile) versus the highest, and being an area with EBP delivery.

**Conclusions:** Identifying area-level correlates of EBP delivery and/or fall-related hospitalization hotspots has practical use that can allow for immediate action (eg, resource allocation) by policy-makers and other stakeholders. In resource-finite settings, such as the aging services sector, identifying high priority areas can allow for precise allocation of limited resources.

## Abstract 3-4

### Is a Home Exercise Program a Viable Alternative for Older Adults with Symptomatic Rotator Cuff Pathology?

Robbins CB, Miller BS, Carpenter JE, Bedi A, Gagnier JJ

**Purpose:** The purpose of this study was to examine the effectiveness of a home exercise program for older adults with symptomatic rotator cuff pathology.

**Methods:** We conducted secondary analysis of data obtained from the Michigan Shoulder Pain Registry ( $N = 219$ ). The dependent variables were the change in scores from baseline to six months using the Western Ontario Rotator Cuff (WORC) index, pain VAS scale, and the VR-12 quality of life scale. Participants were categorized into three groups: no treatment, home exercise program (HEP), or formal physical therapy (PT), based on record review. Inclusion criteria included patients over 18 with partial or full-thickness tear as determined by clinical exam and imaging. Exclusion criteria were evidence of fracture, severe osteoarthritis, or adhesive capsulitis.

**Results:** Age was 62 ( $SD \pm 11$ ) years old with 57.5% of the sample being male. At baseline there were no significant differences between groups. For pain VAS the model was not significant ( $F(2,121) = 1.45, p = .239$ ), however the effect size difference between the pain scores for the HEP group and the no treatment group were medium sized ( $d = 0.306$ ), whereas between the HEP group and the formal treatment group they were small ( $d = -0.04$ ). Change in WORC score resulted in a significant model ( $F(2,116) = 6.29, p = .003$ ). Using a post-hoc Dunnett comparison of both HEP and formal PT to no treatment, both the HEP and PT group were significantly different ( $p = .023$  and  $p = .002$ , respectively) from the no treatment group. The HEP and PT groups were not significantly different from each other ( $p = .961$ ). There were no significant effects for the VR-12.

**Conclusions:** The present study provides some evidence that at least in the short term using an HEP program could yield functional outcomes similar to those in formal physical therapy.

## Abstract 3-5

### Revisiting the 1999 Bunk Bed Ruling: Comparing Young Adult Injuries in Jail and Non-Institutional Settings

Jimenez LM, Rosseim ME

**Purpose:** The 1999 bunk bed safety standard was established to reduce the number of child fall and entrapment injuries and deaths. Effective in June of 2000, this federal ruling outlined requirements for guardrails and bed end structures in bunk beds manufactured for residential settings. These requirements excluded institutional settings due to insufficient data to indicate risk. The current study was the first to compare bunk bed-related injuries among adults in residential settings, where federal regulations apply, to jails, an institutional setting where they do not apply.

**Methods:** National Electronic Injury Surveillance System (NEISS) data from 2010 to 2015 were used. The study sample was comprised of young adults aged 21 to 35 years who were injured by bunk beds in either jail or a residential setting. Statistical weights were used to generate national injury estimates.

**Results:** There was a comparable number of contusion/abrasion and sprain/strain injuries in home (1,522 & 1,644) and jail (1,681 & 1,663) settings. However, fractures were nearly three times as common in jails (869) compared to homes (319). Lacerations were more than twice as common in jails (946) than in homes (398). Injuries to the head were twice as common in jails (1,160) compared to homes (555). Though falling and rolling were the leading cause of injury in both settings, there were substantially more in jails (5,477) than in homes (3,338).

**Conclusions:** This study is the first to compare bunk bed injuries across institutional and non-institutional settings. Findings suggest that bunk bed injuries in jails are more severe than those obtained in residential settings. These observations may be a result of different risk levels between environments and/or differences in the beds' safety features. As a result, more research is needed to examine the relationship between bunk bed safety features and adult injury risk.

## Abstract 3-6

### State Helmet Policies and Helmet Use among Fatally Injured Moped Riders

Boone EM, Rossheim ME

**Purpose:** Since 2001, annual fatalities from moped crashes have more than quadrupled in the United States. Research supports that helmet use reduces the risk of fatal injury among riders of powered two-wheeled vehicles, including mopeds. The current study examined the association between state helmet policy and helmet use among fatally injured moped riders. Since previously conducted research suggests that alcohol use is a risk factor for helmet non-use among motorcyclists, the association between alcohol and helmet use was also examined.

**Methods:** The Fatality Analysis Reporting System (FARS) is a census of all fatal motor vehicle crashes in the United States. FARS data from 2014 and 2015 were examined. Chi-squared and multivariable logistic regression analyses were used to examine risk factors for helmet non-use among the 300 fatally injured moped riders during these years.

**Results:** Adjusting for confounders, state helmet policy was significantly associated with moped helmet use among fatally injured riders ( $p < .001$ ). The unadjusted odds of wearing a helmet was nearly 50 times greater for riders who were legally required to wear a helmet; adjusting for confounders increased the estimated odds ratio to over 70. There was no statistically significant relationship observed between alcohol use and helmet use. However, nearly half of all fatal moped crashes involved alcohol ( $BAC \geq 0.01$  g/dL).

**Conclusions:** State helmet policies are strongly associated with helmet use by moped riders. States without helmet laws for all moped riders should consider their implementation. This recommendation applies especially to South Carolina, Indiana, Florida, and Hawaii, which collectively accounted for 50% of all moped fatalities during the study period. None of these states require moped riders over 21 years old to wear a helmet.

## Abstract 3-7

### Plain Water Consumption in Relation to Energy Intake and Diet Quality among U.S. Adults, 2005-2012

An R, McCaffrey J

**Purpose:** This study examined plain water consumption in relation to energy intake and diet quality among U.S. adults.

**Methods:** A nationally representative sample of 18,311 adults 18 years and older from the National Health and Nutrition Examination Survey 2005-2012 waves was analyzed. A first-difference estimator addressed confounding bias from time-invariant unobservables (eg, eating habits, taste preferences) by using within-individual variations in diet and plain water consumption between 2 nonconsecutive 24-hour dietary recalls.

**Results:** One percentage point increase in the proportion of daily plain water in total dietary water consumption was associated with a reduction in daily total energy intake by 8.58 (95% confidence interval = 7.87, 9.29) kcal, energy intake from sugar-sweetened beverages by 1.43 (1.27, 1.59) kcal, energy intake from discretionary foods by 0.88 (0.44, 1.32) kcal, total fat intake by 0.21 (0.17, 0.25) g, saturated fat intake by 0.07 (0.06, 0.09) g, sugar intake by 0.74 (0.67, 0.82) g, sodium intake by 9.80 (8.20, 11.39) mg, and cholesterol intake by 0.88 (0.64, 1.13) g. The effects of plain water intake on diet were similar across race/ethnicity, education attainment, income level, and body weight status, but were larger among males and young/middle-aged adults than among females and older adults, respectively. Daily overall diet quality measured by the Healthy Eating Index-2010 was not found to be associated with the proportion of daily plain water in total dietary water consumption.

**Conclusions:** Promoting plain water intake could be a useful public health strategy to reduce energy and targeted nutrient consumption in U.S. adults, a finding which warrants confirmation by future controlled interventions.

## Abstract 3-8

### Self-care Difficulties and Sources of Support Reliance among Middle-Aged and Older Adults with Chronic Conditions

Smith ML, Riggle SD, Bergeron CD, Towne SD, Ahn S, Ory MG

**Purpose:** Almost 90% of older adults have at least one chronic condition. This study identifies: (1) factors associated with participants reporting difficulties self-managing their chronic condition(s); and (2) factors associated with participants' reliance on external sources for ongoing help/support to improve their health and manage their health conditions.

**Methods:** Data were analyzed from 731 middle-aged and older adults with 1+ chronic conditions who completed the NCOA Chronic Care Survey. Binary logistic regression was used to identify factors associated with difficulties self-managing their chronic conditions. A series of ordinal regression models were fitted to identify factors associated with reliance for ongoing help/support.

**Results:** Over 31% of participants reported their health condition(s) made it difficult for them to better care for themselves. Participants who were Hispanic (OR = 3.08,  $p = .009$ ), had 3+ chronic conditions (OR = 3.05,  $p < .001$ ), and took more medications daily (OR = 1.07,  $p = .046$ ) were more likely to report difficulties self-managing their chronic condition(s). Further, participants who reported leaving the hospital or a doctor's office confused about what they should do to manage their health (OR = 1.48,  $p = .023$ ) and feeling that their doctor does not realize what it is really like for them at home trying to take care of their health (OR = 2.19,  $p < .001$ ) were more likely to report difficulties self-managing their chronic conditions. The most commonly reported source participants relied on for ongoing help/support was healthcare providers, followed by a friend/relative, the internet, people who have similar health problems, and community groups/clubs. In the ordinal regression models, common and unique factors were identified to influence levels of reliance on external sources for ongoing help/support.

**Conclusion:** In a time of personalized medicine, simultaneously considering patients' disease profiles, difficulties self-managing chronic conditions at home, and interactions with the healthcare system (physician visits, frustrations, communication, joint decision-making) can inform tailored approaches and strategies for enhanced patient education/engagement, resource identification, and support service linkage.

## Abstract 3-9

### Consumption of Sugar-sweetened Beverages and Discretionary Foods among U.S Adults by Purchase Location

An R, Maurer G

**Purpose:** Excess calorie intake from sugar-sweetened beverages (SSBs) and energy-dense, nutrient-poor foods occupies a significant proportion of a Western diet. The purpose of this study was to examine consumption of SSBs and discretionary foods in U.S. adults by purchase location.

**Methods:** Nationally representative 24-hour dietary recall data came from the 2011-2012 National Health and Nutrition Examination Survey. The discretionary food category identifies energy-dense, nutrient-poor foods that do not necessarily contain essential nutrients but may add variety and enjoyment. Linear regressions were performed to estimate daily calorie intake from SSBs and discretionary foods by purchase location (supermarket/grocery store, convenience store, vending machine, fast-food restaurant, full-service restaurant, and other source), adjusting for individual characteristics and sampling design.

**Results:** During 2011-2012, 46.3% and 88.8% of U.S. adults consumed SSBs and discretionary foods on any given day, respectively. SSB consumers on average consumed 213.0 kcal from SSBs daily, 111.6 kcal (52.4%) of which were purchased from supermarkets/grocery stores, 33.0 kcal (15.5%) from fast-food restaurants, 23.9 kcal (11.2%) from convenience stores, 17.1 kcal (8.0%) from full-service restaurants, 8.5 kcal (4.0%) from vending machines, and 19.0 kcal (8.9%) from other sources. Discretionary food consumers on average consumed 439.0 kcal from discretionary foods daily, 280.1 kcal (63.8%) of which were purchased from supermarkets/grocery stores, 45.8 kcal (10.4%) from fast-food restaurants, 30.0 kcal (6.8%) from full-service restaurants, 21.1 kcal (4.8%) from convenience stores, 4.1 kcal (0.9%) from vending machines, and 58.0 kcal (13.2%) from other sources.

**Conclusions:** Supermarkets/grocery stores were by far the single largest source for SSB and discretionary food purchases in U.S. adults.

## Abstract 3-10

### 10 Year Risk Prediction of Atherosclerotic Cardiovascular Disease in Colorado Firefighters

Li K, Ochoa E, Lipsey T, Nelson T

**Purpose:** The purpose of this study was to estimate the prevalence of 10-year predicted atherosclerotic cardiovascular disease (ASCVD) risk (10-year risk) in Colorado male and female firefighters aged  $\geq 40$  using newly developed pooled cohort risk equations issued by the American College of Cardiology and the American Heart Association in 2013.

**Methods:** The data were from 275 Caucasian male and 24 Caucasian female Colorado firefighters aged 40 years and older. Participants were categorized into groups with 5%, 7.5%, and 10% as cut points according to their 10-year risk of ASCVD. Metabolic syndrome (MetS) was classified as having  $\geq 3$  metabolic abnormalities. Chi-square statistics were used to examine the association between ASCVD risk, MetS, and age.

**Results:** Of the total 299 firefighters, 18.1% of them had a 10-year risk of  $\geq 5\%$  (8.3% female [ $N = 2$ ] and 18.9% male [ $N = 52$ ]). Eight percent of these Colorado firefighters ( $N = 24$ ) had a 10-year risk of  $\geq 10\%$ . The results of the chi-square tests showed that MetS and age were significantly associated with 10-year risk. Specifically, older firefighters and firefighters with MetS were more likely to have a greater 10-year risk (Chi-square = 39.09,  $df = 9$ ,  $p < .001$ ). In firefighters who had MetS, 43.4% had a 10-year risk of  $\geq 5\%$ , whereas among those without MetS, only 12.6% had a 10-year risk of  $\geq 5\%$  (Chi-square = 39.58,  $df = 3$ ,  $p < .001$ ).

**Conclusion:** About one in five of these Colorado firefighters have predicted ASCVD risk of  $\geq 5\%$  and 8% have risk of  $\geq 10\%$ . The high percentage of predicted ASCVD risk suggests that primary and secondary prevention should be emphasized among firefighters given their high risk of on-duty mortality. A longitudinal study will be conducted to follow these firefighters for incident of CVD.

## Abstract 3-11

### **Relationship between Agricultural Experiences and Students' Fruit and Vegetable Perceptions and Consumption: Formative Research to Develop a Robust Urban Agriculture Program in Public Schools**

Greer AE, Davis S, Sandolo C, Gaudet N, Castrogivanni B

**Purpose:** There is limited evidence examining how urban agricultural experiences might benefit youth. This study examined the relationship between high school students' agricultural experiences and their 1) attitudes about consuming local fruits and vegetables (f/v), 2) willingness to try new f/v, and f/v consumption.

**Methods:** Students attending three high schools in a racially diverse, lower income, urban community were purposively sampled. Students ( $n = 327$ ) completed a questionnaire which asked about their agricultural experiences (ie, prior work in a garden/farm, garden at home), f/v consumption (validated 2-item measure), attitudes about consuming local produce (Cronbach's  $\alpha = .73$ ), and willingness to try new fruits (Cronbach's  $\alpha = .86$ ) and vegetables (Cronbach's  $\alpha = .91$ ). Independent t-tests and chi-square tests were used to analyze the data.

**Results:** Half of students (52.9%) reported prior farm/garden work experience, and 29.7% reported having a garden at home. Few students reported consuming at least 3 cups of vegetables/day (9.8%) or 2 cups of fruit/day (37.0%). Students with prior farm/garden experience had more favorable scores for local produce attitudes ( $p = .002$ ) and willingness to try new fruits ( $p < .001$ ) and vegetables ( $p < .001$ ) than students without prior experience. There were no significant associations between farm/garden experience and consuming adequate fruit ( $p = .853$ ) or vegetables ( $p = .959$ ). Students with a home garden had more favorable scores for local produce attitudes ( $p = .018$ ) and willingness to try new fruits ( $p = .001$ ) and vegetables ( $p < .001$ ) than students without a garden. There was a significant association between having a home garden and consuming adequate vegetables ( $p = .007$ ), but not fruit ( $p = .675$ ).

**Conclusions:** It might be that home gardens were uniquely related to adequate vegetable consumption because home gardens can influence both f/v attitudes and access. High schools might consider agricultural learning opportunities, such as school gardens and farm-to-school programs, which promote positive attitudes about f/v and could potentially increase f/v access.

## Abstract 3-12

### Gender Differences in the Cumulative Risk Factors Associated with Food Insecurity among Homeless Adults

Hernandez DC, Arlinghaus K, Reitzel LR, Vidrine J, Vidrine D, Kendzor DE, Businelle MS

**Purpose:** Current knowledge on the determinants of food insecurity is based on low-income mothers with children, with a dearth of information among homeless adults. Aside from poverty, correlates of food insecurity include poor mental health, risky health behaviors, household disruption, and victimization, which are also common among homeless adults but do vary by gender. According to cumulative risk theory, it is not one particular risk factor but the accumulation of risk factors that places individuals at risk for negative health consequences. The purpose of the study was to examine gender differences in the relationship between cumulative risk factors as predictors of food insecurity among homeless adults.

**Methods:** Adult participants were recruited from six area shelters in Oklahoma City ( $N = 581$ ). Participants who affirmatively responded to 5-6 items of the 6-item USDA Food Security Scale-Short form were considered to have experienced the most severe form of food insecurity, very low food security. Three indices of cumulative risk were created. Each index was based on aggregate experiences of particular behaviors: poor health & risky health behaviors index (poor health, depression, post-traumatic stress disorder, alcohol abuse, smoking), household disruption & victimization index (homeless as a child, jail, foster care, forced to have sex, witnessed violence), and financial barriers index (unemployment/disability limits employment, no sources of income, no high school diploma).

**Results:** In covariate-adjusted models, the poor health composite predicted very low food security among women [Odds Ratio (OR) = 1.31, 95% Confidence Interval (CI) = 1.05 – 1.64,  $p < .05$ ], while the poor health composite [OR = 1.38, 95% CI = 1.05 – 1.82,  $p < .05$ ] and the disruption composite [OR = 1.65, CI = 1.24 – 2.20,  $p < .01$ ] predicted very low food security among men.

**Conclusions:** Reducing severe hunger may require gender-targeted resources/interventions, in addition to food and housing assistance.

## Abstract 3-13

### Opportunities for Integrating Local Food Systems into Urban High Schools

Greer AE, Davis S, Sandolo C, Gaudet N, Castrogivanni B

**Purpose:** Local food systems can support environmental justice, sustainability, and health. We examined perceptions of local food and ideas for promoting local food consumption among high school students in a lower-income, ethnically diverse, Northeastern community.

**Methods:** Six focus groups ( $n = 53$ ) were conducted with students using a semi-structured discussion guide. Atlast.ti, qualitative software, was used to manage and analyze the data. Data were coded and reviewed to identify code categories which could be taken to represent themes.

**Results:** Students (56.8% female, 86.5% non-white) commonly described local food as being grown “nearby” or “here.” Overwhelmingly, students perceived local food to be of higher quality (eg, “tastes better,” “fresher,”) than non-local food. Students requested “fresh” produce and said that the foods they are currently served are “unnatural” and “made in a factory.” Students reported that consuming local food “benefits the environment.” Students also discussed how consuming local food builds community and trust. For example, one student explained his interest in consuming local food by saying, “This [town] is a bad place. You want to have a better community.” With regard to promoting local produce, students recommended large colorful posters highlighting the benefits of local food in school locations with captive audiences (eg, lunch line, security line, and classrooms). They recommended taste tests as a “no risk” way of trying local produce.

**Conclusions:** These findings support the integration of local food systems (eg, farm-school partnerships) into high schools and provide ideas for how to best introduce and promote local foods among high schools students.

## Abstract 3-14

### **Nutrition and Distress Intolerance as Potential Links between Food Insecurity and Poor Physical and Mental Health among Homeless Adults**

Solari Williams KD, Hernandez DC, Arlinghaus K, Reitzel LR, Vidrine JI, Vidrine DJ, Kendzoe DE, Businelle MS

**Purpose:** Food insecurity is associated with negative health outcomes which could be influenced by various pathways. The neomaterial theoretical perspective suggests that nutritional deficiencies as a consequence of insufficient food access are related to poor health. The psychosocial theoretical perspective suggests that self-awareness of being disadvantaged relative to others can lead to negative emotions provoking physiological changes and, consequently, poor health. Building on the two theoretical perspectives, the purpose of this study was to examine fruit/vegetable consumption and distress intolerance as potential links between food insecurity and poor physical health, depression, and post-traumatic stress disorder (PTSD) among homeless adults.

**Methods:** Adults were recruited from six area shelters in Oklahoma City ( $N=566$ ). Participants who affirmatively responded to  $\geq 2$  items of the 6-item USDA Food Security Scale-Short Form were categorized as food insecure. Self-rated health was dichotomized to indicate poor/fair health vs. good/very good/excellent. Depression was based on the 8-item Patient Health Questionnaire and PTSD was based on the Primary Care PTSD 4-item screener. Nutrition was based on average fruit/vegetable intake per day in the past week. Distress intolerance was based on the 15-item self-reported Distress Tolerance Scale. Covariate-adjusted logistic regression models were conducted and indirect effects were assessed using bootstrapping methods outlined by Preacher and Hayes.

**Results:** On average participants were 44 years of age, 36% female, 57% white, and 77% food insecure; and one-third experienced poor health, depression, and PTSD. In covariate-adjusted models, fruit/vegetable consumption was a non-significant mediator. Indirect effects indicated that distress intolerance partially mediated the association between food insecurity and poor health ( $\beta = 0.28$ , [0.14, 0.46]), depression ( $\beta = 0.55$ , [0.32, 0.79]), and PTSD ( $\beta = 0.38$ , [0.22, 0.57]).

**Conclusions:** The lack of access to food may lower the ability to withstand emotional distress and thereby contribute to negative health outcomes. Shelter-based interventions that reduce distress intolerance could improve physical and mental health.

## Abstract 3-15

### Using the Integrative Model of Behavioral Prediction to Predict Vegetable Subgroup Consumption among College Students

Senkowsji VM, Branscum PW

**Purpose:** Along with daily recommendations for vegetable consumption, the USDA has published weekly recommendations for five vegetable subgroups (beans and peas, starchy, red and orange, green, and other). While many studies have examined theory-based determinants of daily vegetable consumption, no study has investigated theory-based determinants for meeting these weekly recommendations. Therefore the purpose of this study was to operationalize the Integrative Model (IM) to predict each behavior among college students ( $n = 386$ ) attending a southwestern university.

**Methods:** A valid and reliable instrument evaluating vegetable subgroup consumption and IM constructs (attitudes, perceived norms, perceived behavioral control (PBC), and intentions) was distributed via mass email, inviting students to participate in an online survey. Stepwise multiple regression models were used to predict behavioral intentions of each behavior, and logistic regression models were used to predict those who were meeting (or not meeting) vegetable subgroup recommendations.

**Results:** Only 2.3% ( $n = 9$ ) of participants met all five subgroup recommendations, while 93.3% ( $n = 360$ ) met three or fewer subgroup recommendations. In the first model, attitudes, perceived norms, and PBC predicted 40.5 to 54.6% (Adjusted<sup>2</sup>) of the variance of intentions for each vegetable subgroup. In the second model, intentions and PBC predicted 14.2% to 44.3% of the variance for meeting vegetable subgroup recommendations. Of note, intentions were a significant predictor for all five models ( $p \leq .002$ ), while PBC was only significant for the beans and peas ( $p = .002$ ) and starchy vegetable ( $p = .011$ ) models.

**Conclusions:** Overall, the IM was found to be a useful framework for predicting the intentions of vegetable subgroup consumption and each behavior. While vegetable consumption is typically studied as a single behavior, understanding behavioral determinants for consuming defined vegetable subgroups may be more beneficial, as it provides targeted information about these foods, from which theory based interventions can be developed.

## Abstract 3-16

### **Produce Prescriptions for Food Insecure Patients with Hypertension in Safety Net Clinics: A Clinical-Community Linkage**

Joshi K, Smith S, Osborne A, Thornton A, McIntosh B, Hoch C, Hood E, Embry M, Benko M, Trapl E

**Purpose:** Little is known regarding the impact of produce prescriptions for hypertension (PRxHTN) within the context of hypertension visits at safety net clinics. We sought to evaluate intervention effectiveness on patient's utilization of farmers' markets (FM) and dietary change related to fruit and vegetable (FV) consumption over 2-3 months.

**Methods:** Health Improvement Partnership – Cuyahoga worked with 3 clinics to integrate, implement, and evaluate PRxHTN, which involves blood pressure measurement, nutrition counseling, and four \$10 FM produce vouchers at each of three monthly provider visits. A validated FV survey was administered at visit 1 and 3. PRxHTN voucher use was tracked via FM redemption logs.

**Results:** Of the 224 participants, most were female (72%) and African American (97%), with a mean age of 62 years. Over half (62%) had a high school level education or below. 189 participants (84%) visited a FM at least once during the program, with 37% reporting visiting for the first time ever. The average number of FM visits was 2 (range 0-6) and the average number of vouchers redeemed was 6 (range 0-12). Among the sub-sample with pre and post survey data ( $N = 140$ ), significant improvement in FV consumption was observed (baseline = 15.5, follow-up = 19.1;  $p < .001$ ). The majority of participants also reported that they tried new FV (79%) because of PRxHTN.

**Conclusions:** PRxHTN is a powerful and feasible model for linking safety net clinics with local FM to promote community resources and improve FV consumption among food insecure adult patients with hypertension.

## Abstract 3-17

### **Fresh Produce for All: Results of a Community-wide Initiative to Increase Access to Fresh Produce in Cleveland**

Borawski E, Bottoms L, Taggart M, Debose N, Pike S, Joshi K, Freedman D, Trapl E

**Purpose:** We examined the impact of a 7-year, intentional and targeted initiative aimed at increasing access to healthy food across a large, low-income, urban community (Cleveland).

**Methods:** Using population-level, locally collected data (eg, Cleveland BRFSS), from prior to the initiative (2008/2009) and again in 2015, we examined changes in the number of farmers' markets (FM), frequency of FM visits, perceptions of quality and price of food, and consumption of fruits and vegetables (F&V), stratifying results by income to examine effectiveness of the intentional approach (ie, targeting lowest income neighborhoods).

**Results:** At baseline, Cleveland had 2.5 FMs per 100,000 residents, and 18.2% accepted SNAP benefits. 49% of households reported incomes of < \$25,000/year, with over a third reporting food insecurity (cutting/skipping meals, not enough money for F&Vs); nearly a quarter were dissatisfied with quality and 66% were dissatisfied with price of food in their neighborhood. In 2015, there were 4.8 FMs per 100,000 residents (compared to 2.5 nationally) and 100% of the markets accepted SNAP benefits (compared to 21% nationally). Residents reported significant increases in frequency of FM visits (ie, 1+ times a week increased from 13.5% [CI: 11.5-15.3] to 18.4% [CI: 16.2-20.7]). These gains were more pronounced at the lowest incomes levels (ie, increase in frequent use from 6.3% to 15% for residents earning < \$15,000/year; from 11.8% to 17.9% for those \$15,000-25,000/year). Satisfaction with quality and price also significantly improved (increased from 27.1% [24.8-29.4] to 42.8% [39.9-45.6] and 9.3% [7.7-11.0] to 17.8% [15.5-20.1], respectively). Overall, there was a small but insignificant increase in fruit consumption; and nearly all change was found among those with incomes < \$25,000/year. No significant change was found in vegetable consumption.

**Conclusion:** Intentional, targeted approaches to increasing community-level access to F&V can be effective - you can build them, and they will come; and those most in need can benefit the most.

## Abstract 3-18

### Exploring Determinants of Disordered Eating Behavior and Eating Disorder Diagnosis through a Developmental Assets Framework

Bleck J, DeBate R, Stern M

**Purpose:** The Developmental Assets Framework proposes a combination of internal and external assets, which serve as the building blocks to healthy development.

**Methods:** Secondary analysis of the National Longitudinal Study of Adolescent Health was employed to assess associations between developmental assets in adolescents and subsequent disordered eating behaviors and diagnosed eating disorders in adulthood. A self-reported positive developmental assets scale was created to assess five external assets including support, encouragement, and bonding with family and neighborhood and five internal assets including self-esteem, sense of purpose, and interpersonal competence.

**Results:** Among females, more self-reported internal assets were associated with lower levels of engagement in disordered eating behaviors (OR: 0.86, 95% CI: 0.82-0.90) and prevalence of diagnosed eating disorders (OR: 0.74, 95% CI: 0.67-0.81). While greater external assets were not associated with disordered eating behaviors, they were associated with increased prevalence of diagnosis (OR: 1.18, 95% CI: 1.06-1.32) among females. No significant associations were observed among males.

**Conclusions:** Results provide additional evidence supporting both internal and external developmental asset-based primary prevention and externally focused secondary prevention with families.

## Abstract 3-19

### **Increasing Health Equity for Latino Immigrants through a Community-based Participatory Research Intervention**

Suarez-Cano GS, Jacquez F, Vaughn L

**Purpose:** The U.S. Latino population, the largest minority group in the nation, experiences a higher prevalence of mental health disparities in comparison to non-Hispanic whites. White individuals have been found to be twice as likely to receive mental health treatment compared to Latinos. Disparities in health status are in part due to differences in healthcare access, lack of health insurance, and quality of care. The almost nine million U.S. Latino immigrants face many unique challenges in accessing affordable, high quality healthcare, especially since they are not eligible for many types of health insurance coverage. To eliminate health inequities experienced by Latino immigrants, research that engages community members in intervention development, implementation, and evaluation is necessary to ensure that health promotion efforts are culturally and contextually appropriate for the populations they are designed to serve.

**Methods:** Using a Community-based Participatory Research (CBPR) model focused on shared-decision making between academic, Latino immigrant co-researchers, and community partners, we developed a three-session stress intervention program focused on active listening and goal setting. Latino immigrant co-researchers implemented the intervention with 113 other Latino immigrants, of which 81% were undocumented, 76% had less than a high school diploma, and 81% percent were living in poverty. Pre- and post-intervention surveys were completed to evaluate the degree to which the program improved social support and ability to manage stress.

**Results:** Results revealed that the amount of stress experienced by participants did not change; however, perceived social support and stress management skills significantly improved following the intervention.

## Abstract 3-20

### **Institutionalization of a National Health Promotion Initiative within the American Heart Association and Local Affiliates**

Muraleetharan D, Garney WR, McLeroy KR, Garcia KE

**Purpose:** In 2014, the Centers for Disease Control and Prevention (CDC) funded five national organizations to conduct community-based chronic disease prevention interventions. By leveraging the national organizations' members or affiliates to implement initiatives, the CDC was able to expand programming into underserved communities and capitalize on existing national and community relationships. This presentation describes how this new program was embedded within one of the funded national organizations—the American Heart Association (AHA).

**Methods:** To evaluate the program, the AHA subcontracted with Texas A&M University. The evaluation used scales adapted from the Levels of Institutionalization (LoIN) scale for health promotion programs. Semi-structured interviews ( $n = 35$ ) were conducted with organizational and program staff. Three domains (passages, routines, and niche saturation) and five different organizational subsystems (production, maintenance, supportive, adaptive, and managerial subsystems) were assessed through the interviews.

**Results:** Previous studies show that the level of institutionalization is characterized by the extent to which a program is embedded within its host organization's subsystems. Interviews revealed that AHA's program went through several important passages associated with institutionalization, which indicate the extent of institutionalization. Passages included developing and putting in place program plans, setting goals, creating mechanisms of accountability, hiring program staff, and creating a new grants management system within the organization. In addition, two important cycles occurred as two cohorts of interventions were initiated (2015 and 2016). However, the program did struggle to engage key players across the organization and alternative funding streams have not been identified, which indicates niche saturation has not occurred.

**Conclusions:** Ultimately, the mission of the AHA aligns closely with the goals of the new program. Therefore, elements of the initiative are likely to be sustained after grant funding ends. However, without additional funding and engagement of certain organizational leaders, the program may not remain intact long-term.

## Abstract 3-21

### Parent Perceptions of School Breakfast

Spruance LA, Harrison C, Woolford M, Coombs C, LeBlanc H

**Purpose:** Participation in school breakfast has many academic and health benefits. Yet, participation remains low, particularly for low-income children and adolescents. The purpose of this study was to examine parent perceptions of school breakfast.

**Methods:** One hundred Utah public schools were randomly selected for participation in the study. Principals were contacted and asked to forward an online survey link to parents. Parents completed the anonymous survey based on their oldest child enrolled in k-12 public school. Univariate and bivariate relationships were examined. Generalized estimating equation regression methods were used to develop a multi-level model including both district (eg, rural/suburban/urban, and percent quartile of free/reduced lunch) and individual (eg, typical breakfast consumption, fruit and vegetable intake, race/ethnicity, etc.) level effects.

**Results:** Parents ( $n = 488$ ) representing 14 districts from the state of Utah participated in the survey. The majority of parents reported that their child's school served breakfast (65%), but 25% did not know if their child's school served breakfast. Compared to students in elementary school, middle school students (OR = 0.32) and high school students (OR = 0.37) were less likely to participate in school breakfast. Parents who perceived there were benefits to school breakfast were almost ten times as likely to report their student participated in school breakfast (OR = 9.99) and those who participate in the free and/or reduce lunch program were five times more likely to participate in school breakfast (OR = 5.00).

**Conclusions:** Understanding parent perceptions of school breakfast is important formative research that will help in developing programs that may increase breakfast participation. Future interventions may include a parent social marketing campaign to educate about the importance of school breakfast and the benefits of breakfast.

## Abstract 3-22

### Effect of Community Therapeutic Program on Empowerment for Veterans of Homelessness

Ding K, Slater M

**Purpose:** Veterans who are homeless often rely on local transitional housing programs for temporary room and board. Even though their end needs may be met during their various length of stay, whether or not providing intervention could lead to more improvement in psychosocial wellbeing has yet to be rigorously tested. The purpose of this study is to evaluate the effectiveness of a therapeutic program model on mental and psychological recovery of residential homeless veterans.

**Methods:** The core of the program is a 12-week therapy session that integrates the Expressive Art Therapy method. The study utilizes a two-group experimental design with three repeated measures to investigate changes in selected clinic symptoms, mental and physical health, overall wellbeing, and empowerment overtime. It involves five housing program sites in northeast Ohio and one additional site in south Ohio as a control. This presentation will discuss findings from the early stages of this study, from its empowerment measure before and after the therapy session in two transitional houses in northeast Ohio. The study itself is still ongoing. The Consumer Empowerment scale developed by Rogers, Chamberlin, Ellison, and Crean in 1997 is an instrument recommended by Ohio Mental Health and Addiction Service (OMHA) as a tool to assess counseling and treatment progress in mental health service in the state of Ohio. The survey has 28 items on a 4-point categorical scale. Between 2015 and early 2016, a total 103 veterans entered the two housing programs that fell into the early stage of the study, but only 39 completed both pre- and post-empowerment assessment.

**Results:** Overall scale mean scores had a significant ( $p < .05$ ) increase from 2.88 to 3.02 when a paired t-test was used. Test significance also was found in subscales of self-esteem, powerlessness, and community activism, but not optimism and righteous anger. After consulting with literature it was found that this sample generally had a higher than average score at pre-test when compared to Ohio average.

**Conclusions:** These findings suggest the therapeutic program did improve the empowerment while the effectiveness of data collection and empowerment measure presented a challenge.

## Abstract 3-23

### Capacity Building Assistance Evaluation with Innovative Pregnancy Prevention Programs (iTP3)

Nelson J, Garney W, Garcia K, Wilson K, Farmer J, McLeroy K

**Purpose:** Innovative teen pregnancy prevention (TPP) programs are needed to address disproportionately high rates of teen pregnancies among underserved youth. Disparities and program gaps in teen pregnancy are evident related to age, race, ethnicity, geography, and population vulnerability (including youth in foster care, parenting teens, and LGBTQ youth). In 2015, the Office of Adolescent Health funded the Innovative Teen Pregnancy Prevention Programs (iTP3) project to support the development of new programs addressing underserved populations.

**Methods:** The iTP3 program uses a capacity building assistance model to assist program developers in creating and testing new TPP programs. To measure the effectiveness of this model, researchers developed a method to track program developers' capacity and technical needs through a mixed-methods approach. Data collection methods include a Capacity Building Assistance (CBA) Needs Survey and an intake interview with a corresponding observation assessment.

**Results:** The CBA Needs Survey found that a majority of program developers ( $n = 15$ ) had the highest need for using programs focused on dissemination/packaging (80%), design thinking principles (73.3%), finding external resources (66.7%-78.6%), sustainability (66.7%), considering ecological changes (60%), using trauma informed care (53.3%), incorporating health equity into programs (53.3%), and sexual health-related topics and rights (53.3%). Most grantees asked for capacity building assistance (CBA) to be delivered through emails or webinars and for the frequency to be as requested or every other month. Interviews revealed high levels (100%) of organizational and program development capacity. However, needs were identified among program developers attempting to conduct feasibility testing on new programs.

**Conclusions:** iTP3 will utilize the findings in the survey, coupled with the CBA interviews, to develop individualized CBA work plans for each of the fifteen innovators. Ultimately, the iTP3 project team hopes that these programs will expand evidence-based programs through CBA.

## Abstract 3-24

### Internet Overuse as a Predictor of Traditional Bullying Victimization in the United States

Choe S, Lin HC, Seo DC

**Purpose:** Despite the American Academy of Pediatrics' recommendation of limiting daily screen time to two hours, youth spend seven hours per day on the Internet on average. Previous studies have suggested that time spent online displaces time spent interacting with friends offline and that social ties at school are weakened for youth who overuse the Internet. Many of these youth with weak social ties experience bullying victimization. However, the association between Internet overuse and bullying victimization remains unclear. Previous studies have also suggested obesity as a potential moderator between Internet overuse and bullying victimization, but the relationship has not been rigorously examined.

**Methods:** This study utilized the National Youth Risk Behavior Surveys 2011-2015 to evaluate the relationship between Internet overuse and traditional bullying victimization using propensity score matching to reduce selection bias, while testing obesity status as a moderator of the relationship. Propensity score estimates were used to match samples based on their probability of Internet overuse. Nearest-neighbor matching was used to generate samples with lowest total propensity score distance and balanced covariates. Logistic regression was used to test significance of variables.

**Results:** A total of 41,656 youth were included in the study to generate a matched sample of 16,924 individuals. Among matched individuals, 54% reported Internet overuse, 19% reported bullying victimization, and 14% were obese based on self-reported weight and height. Internet overuse (AOR = 1.19,  $p < .001$ ) significantly predicted bullying victimization but differently by individual's obesity status (AOR = 0.79,  $p = .46$ ). Internet overuse affected bullying victimization more seriously for youth without obesity. For obese youth, physical appearance appeared to attenuate the relation between Internet overuse and bullying victimization.

**Conclusions:** Youth with excessive use of the Internet are more likely to be bullied at school than those with no or moderate use. Intervention designs that target bullying should consider preventing Internet overuse as a strategy to reduce bullying victimization and stratify target populations by obesity status.

## Abstract 3-25

### Assessing Internal Medicine Residents' and Graduate Nurse Practitioner Students' Perceived Barriers to Using SBIRT in Clinical Practice

Agley J, Carlson J, Gassman RA

**Purpose:** The purpose of this study was to provide a preliminary assessment of internal medicine residents' and graduate nurse practitioner students' anticipated barriers to using SBIRT (Screening, Brief Intervention, and Referral to Treatment) in their clinical practice by type and frequency.

**Methods:** One hundred twenty-three students ( $n = 79$  physician,  $n = 44$  nursing) completed an SBIRT training series then completed an evaluation questionnaire designed to support curricular improvement. This study utilized data from an open-ended item eliciting anticipated barriers to utilizing SBIRT in clinical practice. Responses were coded by two researchers, and complex responses were assigned to multiple categories; inter-rater reliability (Cohen's kappa) was good to excellent for 11 profession/category pairs ( $> .738$ ) and adequate for 1 pair (.581). Differences between groups and strength thereof were assessed using chi-square tests and Cramer's V.

**Results:** Elicited barriers for the combined sample conceptually corresponded to categories established in prior literature on this subject. Time was the most frequently-reported barrier (76.4%), followed by perceived patient characteristics (eg, resistance to SBIRT) and provider characteristics (eg, discomfort with the topic), each at 12.2%. Systemic barriers (eg, belief that screening would not be supported) were less-often reported (7.3%), and some students affirmatively indicated a lack of anticipated barriers to SBIRT (7.3%). Nurse practitioner students reported that time was a barrier to SBIRT less often than did medical residents ( $\chi^2 = 6.22, p = .013, V = 0.225$ ), but no other differences were observed between the groups of students.

**Conclusions:** Nurse practitioner students appear more likely to believe that time can be 'located' within a clinical encounter to address substance misuse using the SBIRT model than do internal medicine residents. It is unclear whether this reflects an actual differential in patient volume during clinical practice, different levels of belief as to the importance of SBIRT, or a different construct altogether. Care should be used in interpreting these results pending experimental replication.

## Abstract 3-26

### Differences in Acceptability of Telehealth Services among Populations with Disabilities

Wilson JF, Kapp VA, Embree JA

**Purpose:** Online counseling, telepsychiatry, and other telemedical services are ubiquitous in today's health services market. Research has demonstrated that online services are enthusiastically utilized by consumers who are deaf. We conducted a survey of individuals with disabilities to assess the acceptability of telehealth services to these populations.

**Methods:** A survey that asked about interest in telehealth services and access to computers and internet was completed by 84 vocational rehabilitation (VR) consumers, with the assistance of their VR counselors, in southwest Ohio. Of the participants, 35% had developmental or intellectual disabilities, 17% had mental illness, 13% had a visual disability, 13% had mobility-related disabilities, 11% were deaf/hard-of-hearing, 7% had learning disabilities, 3% had a traumatic brain injury (TBI), and 1% had medically related disabilities.

**Results:** Only 26% of the VR consumers surveyed were interested in receiving online VR services, and 74% were not; 43% had access to computers and Internet, and 57% did not. When comparing disability groups, 100% of deaf individuals, 62% of individuals with mobility-related disabilities, and 40% of individuals with learning disabilities wanted online services; the other groups were not interested in receiving telehealth services (chi-square = 40.6,  $p < .001$ ). Chief reasons for refusing to use telehealth services included cognitive inability (21%), dislike for computers (20%), preference for face-to-face meetings (19%), and no access to computers/internet (14%).

**Conclusions:** This study demonstrates that telehealth services are not universally acceptable to all populations, especially those with certain disabilities. Individuals who are deaf are accustomed to using videophones, and the leap to online counseling and other telehealth services is a simple move for them. Individuals with mobility and/or transportation issues also welcome the opportunity to receive telehealth services at home. However, most individuals with disabilities are not comfortable with receiving telehealth services.

## Abstract 3-27

### **Digital Divide and Health Disparities: A Systematic Review of National Studies on eHealth Behaviors**

Hong YA, Forjuah SN, Midturi J, Ross J

**Purpose:** Better use of eHealth resources is found to be associated with better mental health, physical health, and financial decision making. As of 2015, more than 87% of American adults had used the Internet and 91% owned a cell phone. It appears that most Americans have access to mobile tools and the digital divide has diminished; and mobile technologies have been hailed as low-cost tools to bridge health disparities. However, recent literature has suggested that the digital divide has gradually shifted from ownership of mobile tools to usage of eHealth resources; and the existing health disparities are further exacerbated by the information divide. The Health Information Technology for Economic and Clinical Health (HITECH) Act, passed as part of the American Recovery and Reinvestment Act of 2009, allocated billions of dollars to promote eHealth. The Affordable Health Care for America Act, passed in 2010, mandated use of electronic medical records and “meaningful use” of eHealth resources. Within the context of ubiquitous access to the Internet and cell phones and the federal regulations to promote the use of eHealth resources, it has become more important for individuals to master the skills of seeking health information online for decision-making, in order to have optimal health behaviors and health outcomes. To date, the debate on whether the digital health divide has narrowed is still ongoing and the evidence on the relationship of the digital divide and health disparities is inconclusive.

**Methods:** We conduct a systematic search of the existing literature covering national surveys of eHealth behaviors and their relationship with digital health divide.

## Abstract 3-28

### Effects of the Chronic Disease Self-Management Program on Medication Adherence among Older Adults

Lee S, Ory MG

**Purpose:** Older adults, who are more vulnerable to chronic diseases than the younger population, account for almost one-third of all medication prescribed in the United States. Unfortunately, medication non-adherence rates in that population remains high. While patient-physician interaction is an important determinant of medication adherence, impacts of patient education programs covering proper use of medication and patient communication skills on medication adherence remains uncertain. The purpose of this study was to examine impacts of improved patient communication skills from the Chronic Disease Self-Management Program (CDSMP) on medication adherence.

**Methods:** Secondary data from the national CDSMP evaluation study was used for this study. The secondary data included the CDSMP participants' sociodemographic characteristics, as well as their baseline and 6-month and 12-month follow-up assessments on health and health-related indicators. This study included those who were 65 years old or older, had one or more chronic conditions, and had attended the first or second session. Ordinal logistic regression models were used to analyze the impact of improvement in patient communication skills on intentional and unintentional medication non-adherence, after controlling for the baseline depression symptoms.

**Results:** This study included 687 participants. On average, participants were 74.8 years old and had about 3 chronic conditions. A majority of the participants were females (83.4%). Self-reported medication adherence did not improve significantly at the 6-month follow-up ( $p = .513$ ) but improved significantly at the 12-month follow-up assessment ( $p = .020$ ). Improvements in patient communication skills at 6-month follow-up had a marginally significant impact on intentional medication non-adherence at 12-month follow-up after controlling for baseline depression symptoms ( $p = .055$ ).

**Conclusions:** Impacts of the CDSMP on patient communication skills provided a limited explanation for the observed improvements in medication adherence. Medication non-adherence is a complex problem that is rooted in a multitude of inter-related factors. Future studies are needed to understand the underlying complexity and guide the future interventions.

## Abstract 3-29

### Who Is Not Using the Internet? Digital Divide among Children and Adolescents in the United States

Lu W

**Purpose:** In the past decade, a plethora of public policy and industry initiatives have been undertaken to connect Americans to the Internet. However, previous research has focused largely on adult populations, and little is known about the “digital divide” among children and adolescents. The purpose of this study is to document socioeconomic disparities in Internet use among children and adolescents in the United States, and investigate factors that may contribute to the digital divide.

**Methods:** Data from the Computer and Internet Use Supplement to the Current Population Survey (CPS), July 2015, were used. For children and adolescents ages 3-18 ( $N = 26,788$ ), parents were asked questions related to computer ownership, Internet use both inside and outside the home, and reasons for not using the Internet. ANOVA was used to examine the presence/prevalence of a digital divide by race, household income, and geographical location. Sampling weights were adjusted in order to achieve nationally representative data. All statistical analyses were conducted with the statistical program R, version 3.2.3.

**Results:** In general, 14.6% of children had never used the Internet at home. Compared with the white children (10.4%), more black (20.1%) and Hispanic (22.0%) children had never used the Internet at home. Over 30% of children from households with annual income of less than \$20,000 had never used the Internet at home, compared with 6.1% of children from households with annual income of above \$100,000. Approximately 57% of children in New Mexico had never used the Internet at home, followed by those in Oklahoma (52.9%), South Carolina (52.7%), and Maryland (51.5%). Affordability was the most commonly reported reason for not using the Internet at home (34.4%), followed by “no need” (27.6%), “no interest” (13.3%), and “no computer” (8.5%).

**Conclusions:** Inequalities exist in Internet use among children and adolescents in the United States. More research and policy attention is needed to address the extensive digital divide.

## Abstract 3-30

### Patient Access and Navigation of Hospital Diabetes Prevention Services

Smock C

**Purpose:** A community health needs assessment conducted with a regional hospital system revealed that patients find it difficult to navigate and access diabetes management and prevention programs. Therefore, the purpose of this study was to assess the characteristics of diabetes management and prevention programs available within the hospital system to improve access to and navigation of these programs.

**Methods:** Using a mixed-methods approach, a program assessment was conducted to identify the diabetes management and prevention services available to patients across the hospital system. A 20-item electronic questionnaire was administered to 52 hospital directors. Semi-structured interviews were conducted with 25 hospital staff including physicians and directors. Data were collected on best practices, navigation of patients across services, entry points, perceived barriers, knowledge, and use of diabetes management and prevention programs.

**Results:** The participants agreed that access to and use of diabetes management and prevention services varied largely by patient location and disease progression. A small percentage of participants scheduled patients for disease management and prevention services compared to verbally describing services or navigating patients to hospital prevention programs. Respondents indicated a need for individualized management and prevention communication resources and increased internal communication to decrease duplication of services and departmental silos.

**Conclusion:** Given that use of hospital diabetes management and prevention services depends largely on recommendations from the patient's first access point, awareness and perceptions of other department diabetes management and prevention services are vital to increase individual patient use and effectiveness of programs. The use of an email-based questionnaire and semi-structured interviews was effective for serving as a catalyst for further hospital collaboration.

## Abstract 3-31

### Improving Diabetes Self-management through Messages Tailored to Patient Activation Levels

Dye CJ, Griffin S, Mayo R, Williams JE, Edwards K, Gimbel R

**Purpose:** The aim of the study, “Enhancing mHealth Technology in the PCMH Environment to Activate Chronic Care Patients,” is to use mobile health technologies to improve the activation of patients with diabetes to self-manage their disease. Research supports that patient activation levels are associated with health behavior, outcomes, and costs. The study hypothesis is that receipt of messages tailored to activation level and behaviors can improve activation.

**Methods:** At scheduled times throughout the 12-month study, control ( $n = 120$ ) and intervention ( $n = 120$ ) patients completed the Patient Activation Measure (PAM), a 13-item scale designed to assess knowledge, skill, and confidence related to managing health and health care, as well as the Summary of Diabetes Self-Care Activities (SDSCA), which assesses engagement in diabetes self-management behaviors. Algorithms based on scores from the PAM and the SDSCA trigger release of tailored messages to intervention participants. Changes in PAM levels, SDSCA scores, and clinical measures such as HbA1C and BMI, are compared between the control and intervention groups.

**Results:** The presentation includes the rubrics for creating messages tailored to patient activation level which incorporate theoretical constructs relevant to those levels. For example, Level One messages focused on overcoming emotions of hopelessness and building acknowledgement that the patient role is important; Level Two messages addressed beliefs about valued behavioral outcomes and improved knowledge and confidence regarding behavior change; Level Three messages addressed building self-efficacy for newly initiated behaviors; and Level Four messages focused on maintenance and relapse prevention. Our presentation also describes the method for delivering the tailored messages through mobile health technologies as well as preliminary findings regarding changes in activation levels and behavior.

**Conclusions:** Public health and healthcare systems are seeking to improve health outcomes and reduce costs. Supporting and improving patient activation for health self-management through tailored messages can help reach that goal.

## Abstract 3-32

### **Exploring Vaccination Beliefs among Uninsured, Latin-American Immigrant Mothers of Adolescent Daughters: A Qualitative Study**

Painter JE, Viana de O. Mesquita S, Jimenez L, Avila Silva A, Petryszyn MA, Sutter C, Sutter R

**Purpose:** Uninsured Latin-American immigrant women are at increased risk for vaccine preventable diseases, such as cervical cancer; yet gaps in vaccine coverage persist. The purpose of this study is to explore vaccine-related beliefs and decision-making among uninsured Latin-American immigrant mothers of adolescent daughters.

**Methods:** A purposive sample of 30 low-income, uninsured, predominantly Latin-American immigrant mothers of adolescent daughters aged 13 to 17 were recruited from two academic-community managed health clinics in Virginia. From March through September 2016, data were collected through in-person, semi-structured interviews, in English or Spanish. NVivo software was used to code and identify themes within the data.

**Results:** The majority of participants self-identified as Hispanic, had less than a high-school level education, were unemployed, and had recently immigrated to the United States. Many participants indicated that their daughters received immunizations upon immigration to the United States, but did not know which diseases the vaccines protected against. In preliminary analyses, common themes included: 1) general acceptance of vaccines if sufficient information was available, 2) importance of provider's opinion about vaccines, 3) dissatisfaction when a large number of vaccines were given at once, and 4) lack of insurance as a barrier to vaccine access.

**Conclusions:** Findings reveal general acceptance of adolescent vaccines, including the HPV vaccine, among this under-resourced, uninsured, Latin-American immigrant population. Notably, despite favorable attitudes toward vaccination, participants' understanding of their daughters' immunization history following immigration to the United States was limited. Findings highlight the need for efforts to help immigrants better understand vaccines administered upon immigration, and provide linkages to additional CDC-recommended vaccines (eg, the HPV vaccine).

## Abstract 3-33

### Health Literacy Pedagogy: A Systematic Literature Review

Dawkins-Moultin L, McKyer L, McDonald A

**Purpose:** In response to recommendations to provide health professionals with health literacy (HL) training, some institutions are implementing HL courses; however, data on the quality of these courses are limited. The purpose of this systematic literature review was to assess the quality of published research that focused on HL pedagogy.

**Methods:** We searched electronic databases and reference lists to identify studies published in English between January 2000 and April 2016 that described HL training for students or practitioners. Quantitative studies were appraised using the Medical Education Research Study Quality Instrument (MERSQI). MERSQI has six domains, each contributing 3 points to the total score. Qualitative studies were appraised using the Critical Appraisal Skills Programme (CASP) Qualitative Research Checklist.

**Results:** Identified studies ( $n = 25$ ) varied widely in design and reporting. The highest possible rating a study could receive on the MERSQI scale was 18. The MERSQI score for the quantitative studies ( $n = 23$ ) ranged from 5 to 16 ( $(\bar{X}) = 9.3$ ;  $s = 2.82$ ). Three studies were rated excellent, 17 fair to good, and three were poor. Overall, quantitative studies performed best in the data analysis domain ( $\bar{X} = 2.65$ ) and worst in evaluation of instrument validity domain ( $\bar{X} = 0.39$ ). Qualitative studies ( $n = 2$ ) were relevant, but weak in trustworthiness.

**Conclusion:** There is need to develop minimum standards or guidelines for conducting and reporting research on HL pedagogy. Effort should also be focused on developing valid tools for measuring HL competence of health professionals.

## Abstract 3-34

### Qualitative Investigation of Vaccine Decision-making among Mother-Daughter Dyads in an Uninsured Immigrant Population

Viana de O. Mesquita S, Painter JE, Jimenez L, Silva AA, Petruszyn MA, Sutter CJ, Sutter R

**Purpose:** Uninsured Latin-American immigrant adolescents are at risk for vaccine-preventable diseases, including HPV. However, coverage for adolescent vaccines, particularly the HPV vaccine, remains sub-optimal among this population. The role that mother-daughter decision-making plays in vaccine uptake among this population remains unclear. Understanding factors salient to adolescent females and their female caregivers regarding vaccine decision-making is critical to enhance vaccine uptake. The purpose of this study was to explore vaccine decision-making among uninsured Latin-American immigrant adolescent females and their primary female caregivers.

**Methods:** Eight uninsured adolescent-caregiver dyads were recruited from two academic-community managed health clinics in Virginia. Data were collected through semi-structured in-person interviews, in English or Spanish. Adolescent and caregiver interviews were conducted simultaneously, but separately, to allow for privacy and confidentiality. Efforts were made to ensure that neither the adolescents nor their caregivers could overhear the others' responses. Data collection ceased when no new insight was forthcoming (theoretical saturation was reached). NVivo software was used to code and identify themes within the data.

**Results:** Preliminary results show similar attitudes among adolescent-caregiver dyads regarding vaccines. In general, participants associated the word vaccine with "protection" or "prevention". The majority reported having good past experiences and expressed future interest in vaccines, including the HPV vaccine. Knowledge about specific adolescent vaccines among dyads was variable. In some cases, caregivers knew more about adolescent vaccines and the diseases they protect against; in other cases, knowledge among adolescents and caregivers was similar. There was general concordance among caregivers and adolescents regarding the vaccine decision-making process; caregivers were the main decision-makers.

**Conclusions:** Results demonstrate that adolescent-caregiver dyads had similarly favorable attitudes toward vaccines. Both adolescents and caregivers indicated that caregivers are the primary decision-makers. Increasing vaccine-related knowledge among adolescent-caregiver dyads is critical. Interventions to increase adolescent vaccination among this population should heavily focus on caregivers.

## Abstract 3-35

### Assessing Functional Health Literacy among Native-Chinese in the US with Limited English Proficiency

Chen X, McKyer L

**Purpose:** Over 21% of the U.S. population does not speak English at home. Among these, many have limited English proficiency (LEP). Language barriers compound problems linked to low health literacy for LEP populations, which contributes to health disparities. Research literature reveal that few health literacy instruments target LEP populations. For our study, we aim to disentangle the Health Literacy (HL) construct by distinguishing language barriers (English proficiency) from functional health literacy.

**Methods:** A cross-sectional design was used to assess native-Chinese speakers with LEP ( $N = 405$ ). All completed the English-TOFHLA first, then the Chinese-TOFHLA. Both contain 36 reading comprehension and 4 numeracy items. Descriptive analyses were performed to assess participants' HL levels. We applied Item Response Theory (IRT) to examine psychometric properties of the instruments.

**Results:** Participants' (158 male, 247 female) mean age was 51.7 years ( $SD = 19.31$ ). 50.6% had annual income of  $< \$12,000$ . Both TOFHL versions exhibited good score reliability ( $\alpha_{\text{English}} = 0.992$ ,  $\alpha_{\text{Chinese}} = 0.835$ ). Using the English-TOFHLA, 36.8% of participants scored as inadequate or marginal HL; using the Chinese-TOFHLA, 4.2% scored as inadequate or marginal HL. However, item discrimination and difficulty parameters under the two-parameter (2PL IRT) model of English-TOFHLA were much larger than the Chinese-TOFHLA. The unidimensionality assumption was violated for the English-TOFHLA but not for the Chinese-TOFHLA, and 19 poor fit items from the English-TOFHLA indicated it was not a precise measure of health literacy in our LEP sample.

**Conclusions:** Differences in classification (marginal HL) between English and Chinese versions suggest language barrier contributes to low health literacy scores among LEP populations, despite good functional literacy in their native language (per low item discrimination and difficulty patterns using Chinese-TOFHLA HL). Research on low health literacy factors among LEP populations must differentiate English proficiency from functional health literacy in people's native language. Instrumentation issues must be clarified for research and practice.

## Abstract 3-36

### Dental Providers' Perceived Barriers and Facilitators for Addressing HPV and Oropharyngeal Cancer Prevention with Patients

Thompson EL, Vamos CA, Vazquez-Otero C, Griner SB, Merrell LK, Kline NS, Daley EM

**Purpose:** Dental providers, such as dentists and dental hygienists, play an important role in HPV-related oropharyngeal cancer prevention. Dental professional organizations recommend providers educate their patients about HPV and oropharyngeal cancers. This study assessed dentists' and dental hygienists' perceived barriers and facilitators for HPV-related oropharyngeal cancer prevention with patients.

**Methods:** Dentists ( $n = 37$ ) and dental hygienists ( $n = 166$ ) attending a professional conference completed a continuing education pre-/post-test survey. The survey included socio-demographic questions (ie, age, gender, provider type, practice type), as well as facilitators and barriers to HPV-related oropharyngeal cancer education with patients. Chi-square tests were used to compare each barrier and facilitator by provider type. A  $p$ -value of 0.05 was considered statistically significant.

**Results:** Among dentists, 54% were female and the mean age was 47.8 ( $SD = 13.4$ ) years. Among dental hygienists, 99% were female and the mean age was 40.4 ( $SD = 10.7$ ) years. The barrier for HPV communication identified by most dentists was lack of privacy (54%), while fear of offending patients (59%) was more common among dental hygienists. Dentists' perceived facilitators for HPV communication were continuing education in journals (95%) and waiting room pamphlets (89%). Dental hygienists also identified both factors, 84% and 90%, respectively, as primary facilitators. No significant differences between profession type were identified for these primary factors.

**Conclusions:** Given the recommendation for dental providers to discuss HPV prevention with their patients, additional education and training on this emerging topic may benefit these professionals. Barriers identified by dental providers point to the patient-provider relationship, particularly concerns when talking with their patients about sensitive topics, including HPV prevention. Integrating dentists' and dental hygienists' preferred tools for HPV prevention communication, such as continuing education and pamphlets, can assist these providers in tailoring communication to their patients regarding HPV prevention. Moreover, addressing these system-level barriers in education opportunities should be considered.

## Abstract 3-37

### Content and Usability Evaluation of HPV Vaccine Online Educational Interventions for Clinicians

Rosen BL, Kreps G, Shepard A

**Purpose:** Despite ample evidence that the three licensed (HPV) vaccines are safe and effective, with the potential to prevent most cancers of the cervix, anus, vagina, vulva, and penis, only 42% and 28% of adolescent females and males, respectively, have completed the three-dose series. Missed clinical opportunities for clinicians to recommend and administer the vaccine is cited as the main cause of low HPV vaccination rates. To counter missed clinical opportunities several organizations have developed HPV vaccine online educational interventions for clinicians. However, there are limited information and evaluations for these interventions. Therefore, this study identifies and evaluates HPV vaccine online educational interventions for clinicians.

**Methods:** Current HPV vaccine online educational interventions were identified from search engines (Google), continuing medical education search engines, health department websites, and professional organization websites. Interventions' content and usability were evaluated on six key indicators: access, content, design, evaluation, interactivity, and theory/models. These indicators were developed based on the leading literature in online content evaluation.

**Results:** A total of 33 interventions were identified. Based on the evaluation indicators, 60.6% ( $n = 20$ ) were webinars, 9.1% ( $n = 3$ ) were videos/lectures, and 30.3% ( $n = 10$ ) were other sources (eg, toolkit, PowerPoint, website modules). All educational interventions had identified the purpose of the intervention. Twenty-nine of the interventions provided the date that the information had been updated, and only two had been updated within the last six months. Of the 33 interventions, 14 (42.2%) provided the users/participants the opportunity to evaluate or provide feedback. No educational intervention explicitly stated a theory or model that was used to develop the intervention.

**Conclusions:** This analysis provides a clear, evidence-based assessment of the strengths and weaknesses of current HPV vaccine online educational interventions and suggests best practices for designing and implementing online programs to promote HPV vaccination.

### Abstract 3-38

#### **Disclosure to Medical Providers as a Barrier to Maximizing Sexual Health Outcomes for Men Who Have Sex with Men (MSM) Residing in Rural Areas of the United States**

Currin JM, Hubach RD

**Purpose:** Sexual health programming is underdeveloped in rural areas of the United States. Research is required to assess how culture impacts HIV screening and engagement in sexual healthcare, specifically among vulnerable populations (eg, MSM). This study sought to evaluate this interplay by assessing if there was a difference in disclosure of sexual orientation/behavior patterns to members of social and sexual networks and informing a medical provider about sexual orientation/behaviors.

**Method:** A total of 212 cisgender MSM residing in rural areas of a south-central state were recruited from multiple venues to complete a comprehensive online questionnaire. Participants identified their HIV serostatus (positive, negative, or unknown), sexual behaviors, and disclosure of sexual orientation and behaviors, along with completing various mental health assessments and providing information about prior mental and physical health diagnoses.

**Results:** When controlling for age and pre-existing conditions, individuals who disclosed their sexual orientation less to members of their social and sexual networks (OR = 0.80 [0.65, 0.97],  $p = .023$ ) were less likely to inform their providers of their sexual orientation and/or behaviors based on the model ( $\chi^2(2) = 10.62$ ,  $p = .005$ ). A Hosmer and Lemeshow test demonstrated the model fit the data ( $\chi^2(8) = 7.80$ ,  $p = .46$ ).

**Conclusion:** Geographic isolation limits access to health and social service providers that support sexual health for rural MSM. Results indicate that MSM residing in a mostly rural area are less likely to disclose their sexual orientation/behaviors, are less likely to seek out HIV testing, and have a greater prevalence of mental health concerns. Failure to disclose to medical providers was related to perceptions of rejection due to sexual orientation. There is an evident need for interventions to enhance patient-provider communication, specifically to encourage providers to engage their clients/patients in conversations about sexual health.

## Abstract 3-39

### Lessons Learned from the “Done in a Day Research Mob”: Process Evaluation of a Brief and Rapid Community-based Participatory Research Project

Chatfield SL, Huff B, Gamble A, Pike E

**Purpose:** Community-based participatory research (CBPR) projects foster community-academic partnerships and facilitate agenda setting by stakeholders. Given that researchers often control dissemination that is focused on generating publications for peer review, community partners’ opportunities for timely access to relevant findings might be limited. Public health researchers conceived the “Done in a Day Research Mob” to engage community members in a rapidly conducted and disseminated research project.

**Methods:** Nineteen community volunteers, students, and interested others residing in a metropolitan area were recruited through flyers, electronic communications, and word of mouth. Two university faculty conducted a process evaluation while acting as participant observers. Given the research topic—assessing latex condom access in diverse neighborhoods—the volunteer researchers designed an observational checklist and conducted fieldwork in ten urban neighborhoods. A report summarizing the participant findings was written and disseminated via social media on the same day. Evaluators gathered pre- and post-event participant data via interviews and written comments, and audio recorded and transcribed group sessions. Data were analyzed with Quirkos software.

**Results:** Most participant responses were coded into the categories: apprehension; learnings; and other potential uses for mobs. Participants described their initial insecurities about participating in live research, reported that they gained a great deal of knowledge about research design and the topic of interest, and listed other topics to explore with the approach. Most participants identified interaction with others as a highlight of their experience.

**Conclusions:** Participants generally described their experience as positive and identified value in “research mobs.” Although the project was proposed as market research and therefore not submitted to an institutional review board, participants described to evaluators frequent informal attempts to gather data, including condom use knowledge, from retail employees and customers. While “research mobs” might have potential for CBPR, the emergent nature of this process has potential ethical repercussions.

## Abstract 3-40

### **Barriers to Providing Comprehensive Contraceptive Counseling to Previously Pregnant Latina Adolescents: Perspectives from Health Care Providers located in the Midwest**

Ramos-Ortiz J, Ruiz Y, Alexzander SC, Guilamo-Ramos V

**Purpose:** Despite dramatic declines in teen pregnancy and birth rates, U.S rates remain higher than other comparable countries and disparities, both geographic and racial/ethnic, persist. Moreover, nearly 1 in 5 teen births are repeat births (RB) and Latina teens, when compared to their white counterparts, are 1.5 times more likely to experience a RB. Four contraceptive behaviors including nonuse, inaccurate use, inconsistent use, or gaps in contraception coverage underlie the high prevalence of unintended pregnancies and RBs. Providing at-risk teens contraceptive counseling that addresses these risky contraceptive behaviors in a comprehensive way is key for preventing RBs. Health Care Providers (HCPs) can play a critical role in reducing RB-risk by offering teens who have experienced a previous pregnancy comprehensive contraceptive counseling during clinic visits. This study sought to identify perceived barriers to providing comprehensive contraceptive counseling to Latina teens with a pregnancy history among HCPs who are geographically located in the Midwest.

**Methods:** Midwestern HCPs ( $N = 10$ ) were interviewed using semi-structured interview techniques. Qualitative data were subjected to content analysis and key themes were extracted. NVivo 11 software was used to analyze data.

**Results:** Prevailing themes included: 1) structural-level barriers including time and need for structured HCP trainings; 2) counseling is complicated by relationship influences on teen's contraceptive use; 3) need for understanding cultural beliefs about and values associated with childbearing; 4) considering how to encourage parental involvement while maintaining teen confidentiality.

**Conclusions:** Providing comprehensive contraceptive counseling to Latina teens with a pregnancy history has great potential as a strategy to reduce RBs. HCPs can play an important role, but study findings suggests that barriers including structural-level barriers, addressing teen's skills for negotiating condom use with partner, determining how best to ensure cultural awareness at the clinic-level, and understanding how best to involve the teen's parent require attention.