



Board 101

Impact of State Laws Governing Physical Education on Attendance among U.S. High School Students, 2003–2017

Ruopeng An, Mengmeng Ji, Caitlin Clarke, Chenghua Guan

Purpose: This study assessed the influence of state laws governing physical education (PE) on weekly PE class attendance among U.S. high school students. Methods: Individual-level data for 533,468 high school students came from the 2003–2017 U.S. national Youth Risk Behavior Survey (YRBS). Data on state laws governing PE came from the National Cancer Institute’s Classification of Laws Associated with School Students (CLASS). Eight distinct state PE policies were scored, with higher scores denoting stronger laws. Individual-level YRBS data were merged with CLASS data based on students’ residential state and survey year. State fixed-effect negative binomial regressions were performed, adjusting for individual-level characteristics and YRBS survey design. Results: A one-score increase in state laws governing PE class time, staffing for PE, joint use agreement for physical activity, assessment of health-related fitness, and PE curriculum was associated with an increase in weekly PE attendance by 0.30, 0.28, 0.22, 0.20, and 0.13 days (p -values < 0.001), respectively. In contrast, a one-score increase in state laws governing moderate-to-vigorous-intensity physical activity time in PE, PE proficiency, and recess time was associated with a reduction in weekly PE attendance by 0.25, 0.15, and 0.09 days (p -values < 0.001), respectively. The effects of most state PE policies on PE class attendance were larger

among girls than boys. Conclusion: State PE policies differentially impacted U.S. high school students’ PE class attendance, with larger effects on female students.

Board 102

Trade Openness and the Obesity Epidemic: A Cross-national Study of 175 Countries during 1975–2016

Ruopeng An, Chenghua Guan, Junyi Liu, Nan Chen, Caitlin Clarke

Purpose: This study assessed the longitudinal relationship between trade openness and obesity rate across 175 countries during 1975–2016. Methods: Two-way (country and year) fixed-effects regressions were performed to examine the openness index (i.e., sum of export and import over gross domestic product) in relation to country obesity rate, using data from the World Health Organization and World Bank. Results: The openness index was found to be positively associated with country obesity prevalence—a 10% increase in the openness index was associated with an increase in obesity rate by 0.80% (95% confidence interval = 0.67%, 0.94%). Across continents, the positive relationship between the openness index and obesity prevalence was strongest among Asian countries, followed by countries in North America and Africa. Across income levels, the positive relationship between the openness index and obesity prevalence was strongest among lower middle-income countries, followed by upper middle-income countries and low-income countries. In contrast, no relationship between the two was identified among high-income countries. Conclusions: Trade



openness was positively associated with country obesity prevalence, and its influence concentrated among developing nations. Policy makers should closely monitor the evolution in obesity rate during trade liberalization and nutrition transition to minimize its negative impact on weight-related population health.

Board 103

Changes in Behavior and Environment as Contributors to Changes in BMI in At-risk Minority and Low-income Youth

Elaine A. Borawski, Shirley M. Moore, Sarah D. Jones, Rachel A. Gardenhire

Purpose: We examined predictors of BMI change over a 3-year period (captured as a slope) among pre-adolescent, predominantly minority and low-income children with excessive weight (BMI at 85th percentile or higher) at baseline, with a particular interest in family history, behavior and behavior change, and changes in physical environments for this already at-risk group as they moved from childhood into adolescence. **Method:** Our sample included 360 urban dwelling children, ages 11-12; 77% African American (AA), 16% Hispanic; 71% families receiving SNAP. Families were seen 4 times over 3 years, a 92% retention rate. Baseline only variables included age, gender, index parent BMI, # of overweight grandparents, parents' concern of child's weight, SNAP/WIC, and the number of unhealthy food retail outlets within .5 mile of home and school. As with BMI change, changes in behavior (diet, physical activity, sleep, stress) and the home food environment were captured through individual regression slopes calculated and

entered in a linear regression model in blocks. Frequency of change in residences and schools was also included. **Results:** With the exception of family history of excess weight, none of the baseline measures were found to be significantly associated with BMI change. Rather, changes in behavior and environments largely drove the changes in BMI. Decreases in BMI were linked to having fewer overweight grandparents ($p < .01$), increases in fitness (number of PACER laps completed; $p = .000$), decreases in sedentary activity (measured by actigraphy; $p < .02$), decreases in amount of sleep on weekends ($p < .02$), and not changing schools ($p = .001$). Changes in residence were not linked to BMI change, nor was diet (via 24 hr recalls) or moderate/vigorous PA. The model explained 16% of the variance in BMI slope ($p = .002$). **Conclusions:** Not surprisingly, multiple factors independently influence BMI in high risk populations, providing further evidence that reducing childhood obesity must include multi-faceted and most likely multi-generational interventions.

Board 104

How Children Search for Health Information Online: An Observational Study

Paul Branscum, Natalie Patricio-Agosto

Purpose: Research in children's digital health literacy, as it applies to actively searching the internet for health information, is in its infancy. A likely contributing factor may be that there are few to no measurement models that can fully evaluate a child's health literacy. The purpose of this study was to

investigate strategies children employ to search for health information relating to obesity prevention on the Internet, using a novel method to evaluate children's digital health literacy skills. Methods: 25 parent-child (9-11 years old) dyads were recruited at a southwestern children's summer day-camp. Parents' health literacy was evaluated using a validated skills-based tool. Children were given 6 scenarios related to diet and physical activity, and were asked to find the answers on the Internet. Internet search activities were recorded via Camtasia. Quantitative (i.e., time spent per question) and qualitative data (i.e., themes related to difficulties searching) were extracted by re-watching the recordings, and transcribing the audio verbatim. Quantitative data were reported as means and standard deviations. To report the qualitative data a content analysis of the audio recordings was done by two independent coders to reveal reoccurring themes. Results: All parents had either proficient or basic health literacy. On average, children spent 1222.36 seconds (+/- 560.47), or ~20 minutes, on the scenarios. Children mostly used ineffective search strategies, and were not able to find the correct answers to most scenarios. Reoccurring themes that were observed included: reliance on Google features (autocorrect/autofill); searching was limited to the first page; results snippets influenced websites children visited; webpage title and layout impacted information seeking; and Google images was highly utilized. Conclusions: Digital health literacy skills of children appear to be low. Results from this study point to a number of digital health literacy skills that should be targeted to children.

Board 105

Fitspiration: The Effects of Social Media on Body Image Perceptions

Katie E. Dolphin, Sarah Haedrich

Purpose: The "fitspiration" movement is meant to inspire people to get healthy through exercise, clean eating, and healthy living; however, emerging research suggests that this movement may actually be more harmful than helpful. In response, the body positive movement has taken off in an effort to push back against stereotypes regarding weight and health. The average person will spend more than five years on social media interacting with images that tout these messages, however, there is little research that explores the effect these differing movements have on the individuals viewing them. Thus, the purpose of this study was to explore the influence of fitspiration and body positive content on body image. Method: A convenience sample of 34 college-aged individuals completed a pre-survey that assessed demographics, body image, and depression levels before unfollowing all fitness-related accounts on Instagram. Participants were then randomly assigned to one of four groups: no fitness-related content (control); only fitspiration content; only body positive content; and both fitspiration and body positive content. Participants followed these accounts for eight weeks. A post-survey was then completed to assess body image. Results: Higher body mass index was associated with lower appearance evaluations ($r = -.38$), while higher depressive symptoms were associated with more negative evaluations of personal appearance ($r = -.48$), fitness ($r = -.51$), and health ($r = -.63$). Following the Instagram intervention,

significant differences were found among the groups for appearance evaluation ($p = .04$) and overweight preoccupation ($p = .02$). Specifically, the control group evaluated their appearance higher, while the fitspiration group reported higher overweight preoccupation than the other groups. Conclusions: The results suggest that fitspiration content negatively impacts body image perception, whereas limiting exposure to fitness-oriented social media images has a positive impact. The ability of social media content to influence self-perceptions must be considered in health promotion programming and research.

Board 106

Comparative Analysis of Maternal Health Service Utilization Among Maternal Women in Ethiopia from 2006 to 2016

Qiping Fan, Maria Roque, Md Mahbub Hossain, Bangning Zhang, Xurui Jin, Lisako McKyer, Ping Ma

Purpose: The purpose of this study was to assess the patterns of utilization of maternal health services, and examine the determinants associated with this health-seeking behavior, with a comparative analysis from 2006 to 2016. Methods: The data from 2011 to 2016 Ethiopia Demographic and Health Survey (EDHS) were utilized. For each dataset, women age 15-49 who had a live birth in the five years before the survey were recruited. In addition to the descriptive analyses, bivariate and multivariate logistic regression analyses between use of antenatal care (ANC) visit, skilled delivery attendants, and postnatal care (PNC) visit and demographic covariates were

performed using Stata 15.0. Results: The findings showed vast differences with overall significant increases in the utilization of ANC and skilled birth attendants among Ethiopian pregnant women from 2006 to 2016; Specifically, the utilization of ANC services increased from 34.0% to 65.5%, and the use of skilled birth attendants increased from 11.7% to 35.9%, respectively. However, the use of postnatal care decreased from 9.3% in 2011 to 6.9% in 2016. The multivariate analysis indicated that low utilization of maternal health service was significantly associated with rural residence, Muslim religion, non-Oromo ethnicity, low educational background, lower household wealth, and multi-parity. Additionally, women who have had ANC visits during pregnancy were more likely to subsequently use skilled delivery attendants. Conclusion: The comparative analysis addressed the need for improving the postpartum services and reducing the disparities in the utilization of maternal services by women's socio-economic status and geographic residences. Future programs and health policies should target the improvement of health care systems, specifically, the capacities to promote the use of professional delivery and postnatal services in Ethiopia.

Board 107

Tailoring Online Behavioral Health Messaging to Maximize Engagement with Latinx Young Adults

Sofia Fernandez, Katherine Perez, Jordan Quintana, Rachel Clarke, Melissa Howard, Michelle Hospital, Staci Morris, Eric Wagner



Purpose: A lack of culturally and developmentally appropriate strategies designed for Latinx young adults continues to impede HIV prevention efforts. This study brought together a Hispanic Serving University and minority-servicing agency to develop and implement prevention efforts designed for young adults in a US metropolitan area ranked highest in HIV prevalence. Based on formative research, social media was chosen as an avenue to disseminate HIV prevention information. The purpose of this research was to explore the relationship between disseminated content and user engagement. **Methods:** Utilizing key performance metrics for online communication and conducting a content analysis, researchers integrated quantitative and qualitative data to provide a systematic examination of online prevention efforts. Independent samples t-tests examined the statistical relationship between content disseminated and user engagement. **Results:** Over the course of 12 months, the project disseminated 174 messages across three social networking sites: Instagram, Twitter, and Facebook. Instagram was the most popular platform in terms of reach ($n = 792$) and the most active in terms of user engagement ($n = 5,614$). Engagement was quantified using a composite score of user likes, comments, shares, and bookmarks. Posts contained a range of themes including campaign promotion ($n = 85, 48.9\%$), human interest ($n = 113, 64.9\%$), health education/news ($n = 61, 35.1\%$) and cross promotion ($n = 20, 11.5\%$). There were significant differences in post engagement for those that contained human interest ($M = 34.02, SD = 11.32$) versus those that did not ($M = 29.02, SD = 15.52$); $t(157) = -2.431, p = .016$. **Conclusions:** As a compliment to

in-person and other traditional mass-mediated techniques, social media is an increasingly relevant avenue to reach young adults with behavioral health information. To maximize engagement, posts should be culturally tailored and include elements of human interest (e.g., local holidays, memes, etc.). Future research should focus on the engagement potential of specific human-interest strategies of greatest impact to solidify and promote best practices for online health communication.

Board 108

A Systematic Examination of Healthy Food Offerings in Corner Stores in a Large, Lower-income Community

Anna E. Greer, Jonathan Delgado, Kerry Morgan, Melissa Quan, Michelle McCabe

Purpose: It is unclear how the use of corner stores/bodegas might impact dietary intake, particularly for those eligible for the Supplemental Nutrition Assistance Program (SNAP) and the Special Supplemental Nutrition program for Women, Infants, and Children (WIC). The purposes of this study were to: 1) objectively examine the presence of healthy food offerings at corner stores in a lower-income, populous city in the Northeast, and 2) determine whether corner stores accepting SNAP and WIC offered healthier options than stores that do not. **Methods:** Using the Nutrition Environment Measures Survey-Corner Store (NEMS-CS), we examined healthy food offerings in 107 of 109 existing corner stores within city boundaries (two store owners declined). NEMS-CS was used to determine the presence (yes/no) of fresh fruits, fresh



vegetables, low sugar cereals (< 7 grams/serving), lean ground beef (\geq 90% lean), low-sodium canned vegetables (< 200mg/serving), and 100% whole wheat bread. A healthy food index (range = 0-6) was created with one point earned for the presence of each of the healthy foods listed above. We also examined the number of fresh fruit and vegetable types available. We used descriptive and Mann Whitney U test statistics in SPSS. Results: Most stores offered fresh fruits (65.4%), vegetables (72.4%), and low sugar cereal (69.2%), whereas only 36.4% offered whole wheat bread and 0.9% offered lean ground beef. Healthy food index scores were significantly higher in stores that accepted SNAP ($p = .025$) and WIC ($p = .002$) versus stores that did not. The number of fruit and vegetable types available was also higher in stores that accepted WIC ($p = .001$) versus stores that did not. Conclusions: Corner stores accepting SNAP and WIC show promise as locations for residents to obtain healthy foods. Efforts to register eligible persons for SNAP and WIC might support access to healthy foods in communities reliant on corner stores for groceries.

Board 109

The Association Between Neighborhood Crime and Park Usage

Jeanette Gustat, Jessica Randazzo, Megan Knapp, Leann Myers, Carolyn Johnson

Purpose: The purpose of this study was to examine the impact of crime on park usage. **Methods:** Park use was examined in 30 parks in two low-income, underresourced neighborhoods of New Orleans, Louisiana.

The System for Observing Play and Recreation in Communities (SOPARC) was used to count users and ascertain their levels of physical activity within the park over the summer of 2018. Observations occurred on two weekdays and one weekend day between 3:30 and 6:00 pm with 2 scans per visit. Park features and activity areas were examined using the Bedimo-Rung Assessment Tool-Direct Observation (BRAT-DO). Rates of violent and property crimes that were reported to the New Orleans Police Department were obtained from the Orleans Parish Communication District for one month prior to the initial park observation within a half-mile buffer from the park centroid. Results: A total of 1,402 people were observed in 30 parks over 3 visits per park. Total crimes occurring in the month preceding the visits ranged from 0 to 1,048 crimes per 1,000 people within a half mile of the parks (with 43.7% being violent crimes). Parks were examined by tertile of neighborhood crime rate: high (> 323 crimes per 1,000 people in the preceding month; 6 parks), medium (between 114 -132 crimes; 13 parks) or low crime rates (≤ 113 crimes; 11 parks). More total, male, and youth users were observed in parks with low and mid-level neighborhood crime rates. There were slightly more female users in parks in higher than low crime neighborhoods. Most moderate to vigorous physical activity occurred in parks in the medium crime rate tertile neighborhoods. Conclusions: Parks in neighborhoods with higher rates of crime within a half mile had fewer users. Crime can be a major deterrent to park use and may be interfering with opportunities for residents to be active.

Board 110

The Role of Weight Status and Individual Attributes on Adolescent Social Relations: Implications for Obesity Prevention

Wura Jacobs, Ashley Merianos, Matthew Lee Smith, Laura Nabors, Alane Fajayan, Thomas Valente

Purpose: This study examined associations between weight status and likelihood of nomination (indegree) for five different and essential social network types important for adolescents' development – friendship, romantic, admiration, success, and popularity. Methods: We conducted a secondary analysis of the University of Southern California Social Networks and Networking Pilot Study (SNS) including 1,110 tenth grade students from four high schools. Multiple Poisson regression analyses using GLM were conducted to examine the relationship between BMI categories calculated using CDC BMI-for-age references (underweight, normal weight, overweight, obese) and adolescents' indegree for the five different network types. Regression analyses controlled for socio-demographics, academic grades, sports participation, current alcohol and/or tobacco use, and school attendance. Results: Obese adolescents were significantly less likely to be nominated as romantic interest ($OR = 0.29$, $95\%CI = 0.19-0.42$), admired ($OR = 0.80$, $95\%CI = 0.65-0.97$), or popular ($OR = 0.71$, $95\%CI = 0.57-0.86$), compared to their normal weight peers. Overweight adolescents were also less likely to be nominated as a romantic interest ($OR = 0.57$, $95\%CI = 0.42-0.78$) or popular ($OR = 0.67$, $95\%CI = 0.53-0.84$), compared to those who were normal weight.

Underweight adolescents were less likely to be nominated as friends ($OR = 0.76$, $95\%CI = 0.60-0.98$), someone admired ($OR = 0.61$, $95\%CI = 0.42-0.90$), likely to succeed ($OR = 0.62$, $95\%CI = 0.44-0.87$), or popular ($OR = 0.40$, $95\%CI = 0.25-0.64$). Conclusions: Our results suggest BMI status is associated with being selected by peers into different types of adolescent networks. In addition to overweight and obese adolescents, underweight adolescents are a unique group at increased risk for social isolation and/or social stigma due to their weight. There is a need for programs designed to combat the negative stereotypes and social norms surrounding adolescent weight-related stigmatization.

Board 111

Image and Message Congruency with Safety Messages on Social Media: Is a Picture Worth a Thousand Words?

Elizabeth G. Klein, Kristin Roberts, Rebecca McAdams, Jennifer Manganello, Lara McKenzie

Purpose: To examine textual and pictorial factors that influence visual attention and correct safety behavior recognition in social media (SM) posts among parents of young children (< 7 years). Methods: Using a within-subjects design, participants ($n = 150$) were exposed to six SM posts, three with imagery that matched the textual information explaining the optimal safety information (concordant) and three with imagery that did not (discordant; i.e., safe sleep post with image containing crib bumpers). Participants were asked to identify each safety action in the SM posts and whether each post had



matching imagery and text, defined congruent (yes/no). An eye-tracking system captured precise visual attention to each post while participants viewed ad lib; areas of interest were drawn around text and images to examine the proportion of dwell time spent on each element, aggregated for concordant and discordant images. Analyses included descriptive statistics displaying percentages, and means compared with a paired t-test. To examine the relationship between concordant imagery and visual attention, generalized estimating equation regressions were employed using SAS 9.4, and accounted for frequency of SM use and health literacy (Newest Vital Signs). Results: Participants were predominantly female (70.6%), married (61.3%), with some college or less (50%), aged 32.8 years. Participants spent an average of 5.3 seconds on the concordant image posts compared to 3.3 seconds on the discordant image posts ($p < 0.001$). In the multivariate model, each second of viewing time on the concordant posts was associated with a 2.8% increase in safety information knowledge ($p < 0.001$); this same relationship was not statistically significant for the discordant image posts ($p = 0.08$). Conclusions: Visual attention to social media posts that depict the recommended safety behaviors attracted significantly higher visual attention and resulted in an increased recognition/identification of the optimal safety actions.

Board 112

Social Cognitive Correlates of Chronic Disease Prevention Behaviors in Men

Adam Knowlden

Purpose: Although obesity impacts both men and women, less is known about the efficacy of behavioral weight loss treatments for men. This is in part because, within this domain of inquiry, men are underrepresented in the research literature. A recent systematic review found men comprised only 27% of enrollees across 244 behavioral weight loss randomized controlled trials. Obesity is a particularly concerning risk factor for men as they are more likely to develop diabetes and have a propensity to have greater abdominal adiposity than women, an independent risk factor for numerous health issues, such as high blood pressure. Approximately 35% of men in the United States are obese, though little theoretical work examining predictors of obesity exists for this population. The purpose of this study was to test the capacity of Bandura's social cognitive model of health behavior to predict fruit and vegetable consumption and physical activity in overweight and obese men. Methods: Data were collected from overweight and obese men using previously validated questionnaires modified for the priority population. Structural equation models were built to examine the direct and indirect effects the social cognitive theory constructs of self-efficacy, outcome expectation, socio-structural factors, and goals on the behaviors under investigation. Results: A total of 305 men participated in this study ($M_{age} = 44.52$; $SD = 6.95$). Overall fit for the social cognitive models of health behavior were adequate, predicting 35.0% and 31.2% of the variance in the fruit and vegetable consumption and physical activity, respectively. Self-efficacy had the greatest total effect on fruit and vegetable consumption ($\beta_{total} = .500$), while goals had the greatest total effect on physical activity ($\beta_{total} = .495$). The indirect effects of



self-efficacy on the two behaviors demonstrates the relative importance of self-efficacy as a mediator for health behavior change. Conclusion: Men are underrepresented in behavioral obesity prevention and treatment research. This study provides support for the social cognitive model of health behavior as a theoretical framework for predicting behaviors hypothesized to protect against and treat obesity in men.

Board 113

Evaluating the Impact of the Healthy Kids Community Challenge (HKCC) on Physical Activity Outcomes Over Time among Older Youth in Participating Communities: A Natural Experiment Study with Repeat Cross-sectional and Longitudinal Results

Scott Leatherdale, Kathleen Burns, Wei Qian, Guy Faulkner, Valerie Carson

Purpose: The Healthy Kids Community Challenge (HKCC) was a community-based intervention funded by the Government of Ontario (Canada), to develop and provide local programs and activities to support youth in becoming more active and healthy. The present study evaluates the impact of the HKCC theme focused on promoting physical activity (Run. Jump. Play. Every Day.) on physical activity outcomes of older youth in HKCC communities within the context of a natural experiment. Methods: A quasi-experimental design was used to examine the impact of the HKCC on three physical activity outcomes among grade 9 to 12 students in the COMPASS (Cannabis use, Obesity, Mental health, Physical activity,

Alcohol use, Smoking, and Sedentary behaviour) study. COMPASS data from year 3 (T1 2014-15: baseline pre-HKCC), year 4 (T2 2015-16: HKCC intervention), and year 5 (T3 2016-17: post-HKCC follow-up) were used as both repeat cross-sectional (T1 $n = 31,548$, T2 $n = 31,457$, T3 $n = 30,454$) and longitudinal (T1-T3, $N = 3,906$) samples. Ontario students in HKCC communities were placed into one of three intervention groups [T2 data collection post-HKCC finishing (IG1), T2 data collection during HKCC (IG2), T2 data collection pre-HKCC starting (IG3)]; Ontario students in non-HKCC communities were control group 1 (CG1) and Alberta students were control group 2 (CG2). Results: Repeat cross-sectional results show over time the HKCC had no significant impact on moderate-to-vigorous physical activity (MVPA), meeting physical activity guideline recommendations, or days per week strength training in any of the intervention groups. Longitudinal results show in IG2 there was a significant decrease in MVPA (IG2: -3.15 min/day) between T1 and T3. There was no significant change in meeting physical activity guidelines or days per week strength training in IG1 or IG3. Conclusions: In general, these robust quasi-experimental results suggest the HKCC did not have the desired impact on improving physical activity outcomes among older youth in HKCC communities. Moving forward, there is a need to provide effective and sustainable interventions to promote physical activity among older youth as the HKCC did not have any meaningful impact on this at-risk population.



Board 114

What Do Future Health Professionals Want to Know Regarding Whole Genome Sequencing? A Qualitative Study of Information Needs

Ming Li, Christine Young, Lei-Shih Chen

Purpose: Whole genome sequencing (WGS) can simultaneously capture and provide various types of genetic information associated with human diseases. As WGS has been used more frequently in both clinical and research settings, there is an increasing need to educate future health professionals on the topic of WGS in order to prepare them for future practice. The purpose of this qualitative study was to explore the information needs regarding WGS among undergraduate and graduate students in health majors. Methods: Fifty-eight undergraduate and graduate students in health majors participated in this semi-structured, in-depth interview study. All interviews were recorded and transcribed. A content analysis approach was employed to analyze the interview data. Results: The average age of participants was 21.4 years, and the majority of participants were females (81.0%). Although most participants (70.7%) had never heard about WGS before, nearly all participants (93.1%) expressed interest in knowing more about WGS. The reasons included increasing self-knowledge of WGS, providing potential benefits of knowing WGS for future practice, having intentions to undergo WGS in the future, and personal curiosity. The desired topics regarding WGS mentioned by participants included: basic knowledge of WGS ($n = 32$, 55.2%),

procedures for undergoing WGS ($n = 24$, 41.4%), delivery and interpretation of WGS results ($n = 20$, 34.5%), finances and health insurance related to WGS ($n = 17$, 29.3%), the application of WGS results on disease prevention ($n = 12$, 20.7%), safety and risks of WGS ($n = 10$, 17.2%), and the benefits of WGS ($n = 9$, 15.5%). Most participants ($n = 46$, 79.3%) preferred a face-to-face environment to facilitate their learning about WGS. Conclusions: To meet future health professionals' information needs regarding WGS, school-based education programs should be developed and implemented. The findings of this study can contribute to the development of WGS education for future health professionals by identifying their preferred topics and information delivery methods.

Board 115

The Role of Family Conflicts in Mediating Childhood Impulsivity to Early Substance Exposure among Adolescents: Evidence from the Adolescent Brain Cognitive Development (ABCD) Study

Zhi Wang, Anne Buu, Hsien-Chang Lin

Purpose: Substance use among adolescents has been a public health concern in the United States. Early substance exposure increases the likelihood of regular substance use and developing substance use disorders later in life. Family environment plays an essential role in adolescent development. Previous studies have found that impulsivity is a predisposing factor in early substance exposure among adolescents. However, the pathways through which impulsivity is associated with early substance exposure

remain unclear, which has limited the extent to which adolescents with high impulsivity level could be prevented from early exposure to substances and initiating regular use. In order to reveal such mechanisms, this study examined how family conflicts may mediate the aforementioned association among U.S. adolescents. Methods: Respondents ($N = 11,875$) from the 2016-2018 Adolescent Brain Cognitive Development (ABCD) Study Release 2.01 were included in this study. Two natural effect models with bootstrap variance estimation were utilized to investigate the mediating effects of family conflicts on how childhood impulsivity is associated with early exposures to alcohol and tobacco, controlling for socio-demographic covariates. Results: Adolescents with high impulsivity level (top 25th percentile) were more likely to sip alcohol and puff tobacco at an early age (9-10 years old) (ORs = 1.60 and 2.11, respectively; $ps < 0.05$), where significant proportions (64% and 54%, respectively) of aforementioned associations were mediated by family conflicts (natural indirect effect: 1.02 and 1.14 respectively; $ps < 0.05$). Conclusions: Findings of this study suggested that family conflicts significantly mediate the associations between childhood impulsivity and early substance exposures (sip alcohol and puff tobacco) among adolescents. In order to reduce adolescents with high impulsivity level from exposing to substance, interventions to ease family conflicts such as counseling and guiding parents to create a stable home environment for children are demanded. Future studies that inform intervention design for families experiencing family conflicts are warranted to prevent adolescents' substance use initiation.

Board 116

Temporal Trends and National Patterns in Adolescent Mental Health Service Use for Depression Across Service Settings

Wenhua Lu

Purpose: Untreated major depression can lead to various negative health and social consequences among adolescents. This study aimed to examine national patterns, temporal trends, and disparities in US adolescents' use of mental health services for 12-month major depression across different settings. Methods: Data were drawn from adolescents aged 12 to 17 ($N = 109,578$) who participated in the annual, cross-sectional National Survey on Drug Use and Health from 2011 to 2017. Patterns, time trends, and disparities in adolescents' service use in specialty mental health, educational, and general medical settings, two or more settings, and combination of different settings were examined using Pearson's χ^2 test and multivariable logistic regression, adjusting for survey years, sampling weights, nonresponse bias, and non-coverage bias. Results: Among adolescents with depression ($N = 11,877$), 49.2% reported having received any type of treatments. Overall, service use in specialty mental health settings was the most common, followed by educational and general medical settings. Across the survey years, a significant increase was observed in adolescents' service use in specialty mental health ($OR = 1.09$, $p < 0.001$) and general medical settings ($OR = 1.06$, $p < 0.05$), whereas the rate of school-based service use remained stable. Around 40% of adolescents received services in two or more settings each year, with no significant change over time. Among multi-



setting service users, the combination of specialty mental health and educational settings was the most common. Adolescents' age, race, gender, family income, and family and school experiences significantly influenced their service use in different settings. Conclusions: Findings highlight the importance of providing integrative care in individual settings and call for more collaborative efforts to facilitate linkages between service settings. Strengthened funding and policy support are critical to improve safety-net mental health services for adolescents from uninsured, low-income, and racial/ethnic minority families.

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Early Detection of Severely Impaired Adolescents with Depression using Logistic Classifier

Wenhua Lu, I-Ming Chiu, Fangming Tian

Purpose: Using pooled data for adolescents aged 12 to 17 from the annual, cross-sectional National Survey on Drug Use and Health 2011-2017, this study aimed to build a predictive model to identify severely impaired adolescents with depression using machine learning algorithms. Methods: Based on the split ratio of 75:25, data were divided into training and test sets. Using the training data, a logistic regression model was estimated to identify risk factors for severe impairment in adolescents with depression. Following that, a logistic classifier was applied to construct a predictive model and multiple threshold values were set up to classify the observations in the test dataset to the category of having severe impairment. Lastly, a "Confusion Matrix" was created to

examine the error and accuracy rate of the predictive model. Results: Logistic regression revealed multiple risk factors for depression-related severe impairment, including being female, being of older age, being white, being from a single-mother household, having less authoritative parents, and having negative school experiences. When the threshold value was set at no less than 0.1, the predictive model was able to identify 1,100 out of 2,070 (53.14% of sensitivity) of severe impaired cases. Meanwhile, 5,093 out of 24,627 cases are wrongly identified (20.68% of false positive rate). When the threshold value was reduced to 0.05%, 1,615 out of 2,070 severely impaired cases were identified (78.02% of sensitivity). However, the better predictive performance came with a cost of larger false positive rate (12,007 out of 24,627 cases or 48.76%). Conclusion: While our empirical findings revealed multiple risk factors for depression-related severe impairment, the capability of our predictive model is subject to the selection of the cut-off value. Without specifying an explicit cost or loss function, it would be difficult to choose an optimal cut-off value. Nevertheless, once a better predictive model is decided, intervention plans can be developed for those high-risk adolescent groups.

Board 118

A Content Analysis of Mass Media Coverage of the 2nd Edition of the Physical Activity Guidelines for Americans

Jay Maddock, Debra Kellstedt



Purpose: The 2nd edition of the Physical Activity Guidelines for Americans was released in November of 2018. This document contained specific guidelines for young children, children and adolescents, adults, older adults, pregnant and postpartum women, and adults living with chronic conditions and disabilities, as well as safety recommendations. Given the complexity of the recommendations, the aim of this study was to assess which of the 12 guidelines were covered by both print and broadcast media. **Methods:** This study used content analysis of mass media news stories on the new physical activity guidelines. The setting for the study was the United States news media. LexisNexis was searched for print media as well as transcripts of broadcast media. YouTube was used to search for broadcast television news stories. All retrieved stories ($n = 44$) were coded independently by two raters on which of the 12 guidelines were covered. **Results:** Most stories reported aerobic guidelines for adults, children, and adolescents and young children. Muscle strengthening and vigorous exercise were covered less frequently. Few stories addressed safety issues or special populations. Print ($M = 6.4$, $SD = 2.7$) covered more recommendations than broadcast media ($M = 4.0$, $SD = 1.9$, $p < .01$). **Conclusions:** Mass media coverage of the physical activity guidelines was incomplete. Coordinated national efforts are needed to ensure that Americans are aware of the new and complete guidelines.

Board 119

Moms on Social Media: A Nationally Representative Online Survey

Rebecca McAdams, Kristin Roberts, Elizabeth Klein, Jennifer Manganello, Lara McKenzie

Purpose: The popularity of social media (SM) offers an opportunity for injury professionals to disseminate reliable and accurate safety recommendations to parents, yet little is known about the reach and impact of these messages on knowledge, behavior adoption, and whether electronic health (eHealth) literacy level is associated with either of these. **Methods:** Parents of young children (< 7 years) were recruited from a nationally representative online survey panel to complete a survey on Internet and SM usage and eHealth literacy, and to gather their reactions to SM posts on three safety topics (safe sleep, bike safety, and poison prevention). Two discordant social posts contained a photo that did not match recommended safety behaviors in the text, and one post had a photo concordant with the recommended safety behavior. The eHealth Literacy Scale (eHEALS) measured eHealth literacy; low eHealth literacy was defined as eHEALS score < 26 . **Results:** A total of 580 parents completed the survey. Most were female (58.6%) with high eHealth literacy (84.5%). Low eHealth literate parents used SM more frequently than high eHealth literate parents for safety information ($p < .0001$). Compared to low eHealth literate parents, a significantly larger proportion of high eHealth literate parents correctly identified a discordant post on safe sleep ($p = .0081$) and poison prevention ($p = .0052$). A larger proportion of high eHealth literate parents correctly identified a concordant post for bike safety ($p = .7022$). **Conclusions:** Injury professionals and other disseminators of safety recommendations can use SM to create and share reliable and



accurate safety and health information. Using concordant imagery and text helps to facilitate parental understanding of recommendations, regardless of eHealth literacy level of the audience. Identifying gaps in the content of SM messaging and parental understanding of messages will allow disseminators of health information to more effectively design health behavior SM content.

Board 120

Analysis of Fathers' Perceptions of Child Physical Activity: An Important Step to Changing the Narrative

Megan McClendon, M. Renée Umstatt Meyer, Andrew Meyer, Kelly Ylitalo, Christina Bridges Hamilton, Joseph Sharkey

Purpose: Physical activity (PA) is important for all children but increases in significance among underserved populations like Mexican-heritage (MH) families. Previous literature has focused on the maternal influence of children within MH families; however, paternal influence is under-researched. The purpose of this study was to explore and disseminate the perceptions of MH fathers in regards to their child's PA and their role in that PA. Methods: MH fathers ($n = 31$) living along the Texas-Mexico border completed dyadic interviews ($n = 16$) addressing two PA questions: 1) "What do you think about your child's PA?", and 2) "When you think about how your child plays and is physically active, how much of what they play or do is influenced by you?" The Family Systems Theory (FST) was modified to include a cultural lens and was paired with Gender Theory, Activation Relationship

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Theory, Parenting Styles, Social Cognitive Theory, and cultural constructs (familismo and machismo) to complete qualitative analysis. Results: Researchers found positive family interaction, family PA, and positive associations between Gender Theory, Activation Relationship Theory, Authoritative Parenting Style, Observational Learning, and cultural constructs when coding positive FST constructs. Coding of negative FST constructs revealed family disarray, infrequent PA, and negative coding of Gender Theory, Activation Relationship Theory, Authoritarian and Permissive Parenting Styles, and machismo. Conclusion: Fathers play a significant role in their families and within child PA. It is important to continue to explore the role and perception of fathers as a powerful step to change the narrative of child PA.

Board 121

Changing the Narrative through Quantitative Analysis of Fathers' Perceptions of Child Physical Activity

Megan McClendon, M. Renée Umstatt Meyer, Andrew Meyer, Kelly Ylitalo, Christina Bridges Hamilton, Joseph Sharkey

Purpose: Health disparities suffered among Mexican-heritage (MH) families have increased prioritization of this group concerning family health; however, researchers have mainly focused on maternal viewpoints. Researchers report the importance of fathers within the family unit but failure to recruit fathers and collect their perceptions remains an issue. The purpose of this study was to analyze paternal perceptions of their responsibilities within the home and

to their child(ren)'s physical activity (PA) engagement. Methods: MH fathers ($n = 312$) living along the Texas-Mexico border completed elicitation surveys ($n = 300$) with the following items used for analysis: 1) "As a dad, what are your responsibilities at home?", and 2) "What things do you actually do in your spare time?" Constructivist Grounded Theory was used to allow for cultural consideration and for the creation of a framework. Codes were then quantified using frequency and percentages of responses before cross-tabulations were run between paternal reported responsibilities and spare time. Results: Over half of the reported responsibilities were monetary (55.8%) with the number one being family expenses (26.2%). Coding of spare time revealed that fathers most often reported doing activities with their families (39.7%), and that this included both sedentary and physical activities. Fathers more often reported being physically active with their sons (5.1% versus 1.2% for daughters) in the form of chores, and reported more sedentary activity with their daughters (20% versus 2.4% for sons). Interestingly, cross-tabulation revealed a strong link between family expenses and television viewing ($n = 21/344$; 6.1%; $p = 0.02$). Conclusion: Findings align with previous reports that MH fathers prioritize their families and are more active with sons than daughters. Cross-tabulation revealed a need to encourage fathers in their role in child PA, especially among girls.

Board 122

Pinterest Belly Fat Loss Exercises: Great Tips to Lose Money, Self-esteem & Time

Ashley Dedrick, Julie Williams Merten, Tammy Adams, Meghann Wheeler, Kassie Terrell, Benjamin Gordon

Purpose: Almost 40% of the U.S. public is considered obese, which has an economic burden of roughly \$147 billion dollars in medical costs. While the public health concern and economic impact of general obesity are well-established, the effects of abdominal obesity (belly fat) are often overlooked; this includes increased risk for heart disease, type II diabetes, high blood pressure, and abnormal cholesterol. As with general weight loss, a healthy diet and physical activity are the most effective ways to manage belly fat. Despite this, there are many ill-advised targeted or spot exercises advertised to reduce belly fat on social media. This study used directed content analysis to examine how exercises to reduce belly fat were portrayed on Pinterest, a social media website used to bookmark online content. Methods: Using the search terms belly fat exercises and belly fat workouts, researchers sampled every fifth pin on Pinterest to collect 234 relevant pins. A codebook was developed, pilot tested, and used to code pins. Two researchers coded pins and interrater reliability was established at 94%. Results: Of the 234 pins, the majority of pins highlighted being thinner (73.1%) rather than overall health (9.4%). Pins were primarily geared toward women (70%), with nearly half of the pins depicting women in sports bras (46.6%) with swimsuit model body-type figures (48.7%); and 18% of the pins showing obvious signs of photo touch up. Only 8.5% depicted racial diversity. The pins did not mention the importance of obtaining healthcare provider input prior to starting an exercise routine (99%), nor did a single pin note the role of genetics in belly fat; only



15% depicted the role of diet, and 1.7% mentioned cardiovascular exercise or sleep. Nearly half (48%) of the pins linked to personal blogs and 42.7% claimed fast results and used words like ‘burner’ (19.7%) or ‘flatten’ (18.4%). Conclusions: Social media is a powerful source of health information. However, there is evidence of misleading weight loss, specifically belly fat loss, strategies being propagated. Public health and exercise science professionals should collaborate to develop social media campaigns to promote positive body image with realistic weight loss strategies that include a balanced diet, exercise, and stress management.

Board 123

Characterization of Brain Signatures to Add Precision to Health Information Interventions

Shirley M. Moore, Anthony Jack, David Fresco, Carol M. Musil

Purpose: Although many of the proposed mediating processes of health behavior change interventions are operationally defined as cognitive processes (e.g., acquiring and using information, self-efficacy, motivation, decision-making), little is known about their underlying brain mechanisms. Brain biomarkers of how people process health information may be an important characteristic on which to individualize health information to optimize self-management of chronic conditions. The purpose of this study was the identification of brain biomarkers that differentially predict responses to two types of health information (fact-focused and emotion/coping-focused)

designed to support optimal self-management of chronic conditions. Method: In a convenience sample (N = 91) of individuals with different chronic conditions, functional magnetic resonance imaging (fMRI) during a specially-designed, ecologically-valid protocol was used to examine brain activation (task differentiation) associated with two large-scale neural networks, the Analytic Network and the Empathy Network, as well as the ventral medial prefrontal cortex (vmPFC), while individuals responded to different types of health information (factual and emotional/coping). Results: The hypothesized reciprocal activation pattern in a priori defined regions was confirmed, such that Analytic Network regions demonstrated greater activity to fact-focused than emotion/coping-focused information, whereas Empathic and vmPFC regions demonstrated greater activity to emotional/coping than to fact-focused health information. Also as predicted, a positive correlation was found between individuals’ task differentiation in the Empathy Network and the vmPFC ($r = 0.68$; $p = .0001$). In addition, significant negative correlations were found between task differentiation in the Analytic Network and both the Empathy Network ($r = -0.39$; $p = .000$) and the vmPFC ($r = -0.31$; $p = .00$). This novel and unpredicted finding suggests a trade-off in individuals’ tendency to process either fact-focused or emotional/coping-focused health information. Conclusions: Advances in our understanding of optimal approaches to designing more individualized, effective health information interventions may be the identification of how the brain processes different types of information and how this varies among individuals.

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Does Scientific Publication Inform Public Discourse? A Case Study Observing Social Media Engagement around Vaccinations

Jordan L. Nelon, Michael Moscarelli, Payton Stupka, Christina Sumners, Taylor Uselton, Megan S. Patterson

Purpose: The purpose of this study was to explore whether online public discourse about vaccinations changes before and after major scientific publications, and to measure what is related to social engagement around vaccinations on Twitter. **Methods:** In September 2018, two weeks' worth of Twitter posts ($n = 2,919$) discussing vaccinations were collected, coded, and analyzed before and after two major 2014 scientific publications. Linear regression analyses examined variables related to engagement with vaccination-related Tweets pre- and post-publication. **Results:** Of the 2,919 Tweets included, the majority occurred after publication (54.8%) and contained pro-vaccine rhetoric (60.5%) compared to anti-vaccine (13.0%) or a neutral bias (26.5%). Anti-vaccine related Tweets decreased by over 25% after scientific publications, while pro-vaccine Tweets increased by 16.6%. Verification status, number of followers, type of cited source, and bias were assessed as independent variables in the model to predict number of likes and were subdivided by time period. The regression model statistically significantly explained 36.5% of the variance in likes ($F(6) = 125.421, p < .0001$) before the scientific publication and explained 19% of the variance after ($F(6) = 63.37, p < .0001$). The same variables were used to predict the number of retweets by time period. The

regression model statistically significantly explained 23.3% of the variance in retweets ($F(6) = 67.701, p < .0001$) before the scientific publication and 30.0% of the variance after ($F(6) = 115.193, p < .0001$). Verification status and number of followers were the strongest predictors of Twitter engagement (i.e., likes and retweets). **Conclusions:** Findings indicate that scientific publications might influence the public health information people share online, and how people engage with online content. In a time when false information is easily spread online, this study suggests the need for continual scientific publication on "hot topics," and urges researchers to partner with influential individuals on social media to disseminate effective, evidence-based, and user-friendly public health information to the public.

Board 125

Characterizing Advance Care Planning among Older Adults Living with HIV as Stages of Change

Annie Nguyen, L. Nelson, J. Bailey

Purpose: Over half of people living with HIV infection in the United States are older adults, ages 50 and over. Older adults living with HIV (OALWH) are at increased risk for health threats, pointing to the importance of engaging in advance care planning (ACP). However, ACP rates remain low. **Methods:** Our study characterizes ACP among OALWH by applying the Transtheoretical Model to conceptualize ACP as a health behavior in terms of the stages of change. ACP was assessed via cross-sectional surveys and measured using the ACP

Engagement Survey. Preliminary data collected from 87 respondents in Los Angeles, CA, are reported here. Results: Race/ethnicity: 41.7% Hispanic/Latino, 29.8% black; 84.7% male; 63.5% gay or lesbian; 50.5% completed high school or less; mean age of 59.4 ($SD = 7.0$); mean of 22.7 years ($SD = 8.1$) since HIV diagnosis. The change stages for signing an Advance Directive were: pre-contemplation (never thought of it/not ready to do it; 55.8%), contemplation (doing in next 6 months; 12.8%), preparation (doing in next 30 days; 8.1%), and action/maintenance (already did it; 23.3%). The breakdown for designating a Healthcare Proxy were: pre-contemplation (58.6%), contemplation (10.3%), preparation (3.4%), and action/maintenance (27.6%). Compared to participants in higher level stages for completing an Advance Directive an designating a Healthcare Proxy, those in the pre-contemplation stage were more likely to have detectable viral loads ($ps < 0.001$) and lower purpose in life scores ($ps < 0.05$). Conclusions: Over half of respondents were in the pre-contemplation stage for two important ACP behaviors representing opportunities for intervention around ACP education and awareness. Detectable viral loads typically indicate poorer health and poorer medication adherence. Along with the finding that respondents have a lower sense of purpose in life may indicate a group that is struggling to manage their physical, mental, and healthcare needs. These are opportunities for intervention.

Board 126

Predicting Beneficial Exercise Behavior among College Students in Recovery: A Social Network Analysis

Megan S. Patterson, Alex M. Russell, Mandy N. Spadine, Katie M. Heinrich, Tyler Prochnow

Purpose: Exercise is especially beneficial for individuals recovering from addiction. In addition to improved physical, emotional, and mental health, exercise is related to longer sobriety for addiction recovery. Because college students have high addiction risk, it is important to understand individual and social factors related to exercise behaviors for students in recovery. Social network analysis (SNA) is a method that tests how individual attributes and within-group relationships influence targeted outcomes. The purpose of this study was to use SNA to understand exercise behaviors within a group of college students in addiction recovery. Methods: Using SNA, this study assessed the relationship between exercise and sobriety, mental health variables, and social connections among a network of students involved in a campus recovery community (CRC). Exercise scores were determined by the Godin Leisure Time Exercise Questionnaire (Godin LTEQ), where scoring 24 or higher indicated engaging in beneficial levels of exercise. Results: Logistic regression analysis revealed a significant model ($R^2 = .598$, $p < .0001$) predicting whether CRC members scored a 24 or higher on the Godin LTEQ. Length of sobriety ($OR = 1.240$, $p = .020$), higher stress ($OR = 1.389$, $p = .024$), lower depression ($OR = .789$, $p = .021$), having fewer network ties ($OR = .448$, $p = .019$), and being connected directly to others scoring a 24 or higher on the Godin LTEQ ($OR = 7.100$, $p = .037$) were



significant predictor variables in the model. Conclusion: This study provides evidence of a relationship between sobriety, mental health, and exercise, as well as interpersonal influences on exercise behaviors. Incorporating exercise opportunities as part of CRC programming may help students stay sober. These results suggest that “who” someone is connected to matters more for exercise than number of network connections. Future research is needed to determine directionality of these variables, as well as replicability across other networks.

Board 127

Leveraging Sport Organizations for Health Behavior: The Influence of Special Olympics Participation on Caregiver Social Isolation and Overall Wellbeing

Andrew Pickett, Zack Damon

Purpose: Stress related to caregiving for individuals with intellectual disabilities has been linked to poor social and health-related outcomes. This study seeks to explore the role sport organizations have in providing a supportive social space for caregivers and resultant health outcomes (i.e., reduced social isolation, improved physical and mental health). Methods: Caregivers of individuals with intellectual disabilities were surveyed about their experiences with Special Olympics and their personal health. Items included scale measures related to social isolation, care-related stress, sense of community, levels of organizational involvement and identity, and subjective assessments of physical and mental health. All scales had been previously validated. Relationships between latent variables

were/will be tested using structural equation modeling (SEM). Results: While data collection is ongoing (fall 2019), pilot data ($n = 27$) for the survey suggests those with high levels of involvement and a strong sense of community in the space experience lower levels of social isolation and caregiver stress. Further, social isolation and caregiver stress are inversely related with mental health. Conclusions: Based on findings from pilot data, we expect to find that the sport organization provides an important support mechanism for caregivers of those with intellectual disabilities. Specifically, early findings suggest involvement in Special Olympics provided a significant social outlet for caregivers, reducing feelings of isolation. Early findings also suggest a positive relationship between sense of community and mental health for caregivers. No relationship between participation and physical health has yet been observed. Thus, we expect to find that involvement in Special Olympics has positive effects on wellbeing for caregivers of individuals with intellectual disabilities. Given these early findings, we further argue that sport and physical activity organizations could be leveraged in a number of ways to improve health and wellbeing for multiple stakeholder groups.

Board 128

Network Impact on Adolescent Perceived Barriers to Physical Activity

Tyler Prochnow, Thabo van Woudenberg, Megan S. Patterson

Purpose: Physical activity (PA) is widely linked to positive health outcomes among adolescents. Unfortunately, 80% of

adolescents worldwide do not meet daily recommendations, which may be due to perceived barriers to PA. Peer groups and interactions with others significantly affect PA behaviors among adolescents. This study aims to analyze how perceived barriers are distributed throughout an adolescent friendship network and how these barriers may impact objective PA measures. Methods: Adolescents ($n = 381$, $M = 10.77$ years, $SD = 1.30$ years, 51.4% male) were recruited from 12 different schools. Adolescents reported frequency of experiencing five types of barriers to PA: body, social, resource, convenience, and fitness. Adolescents nominated their friends using a list of all included study participants. Accelerometers were used to measure average steps and minutes of moderate-to-vigorous intensity PA (MVPA) per day. Linear network autocorrelation models determined whether barrier scores were clustered within networks while controlling for school, age, and sex; and to analyze possible impact of barriers on objective PA measures. Results: Body ($p = .001$) and social ($p = .02$) subscale scores displayed significant network effects, suggesting adolescents perceived similar amounts of body and social barriers as their friends. Models for both MVPA and steps per day displayed significant network effects suggesting adolescent MVPA and steps per day were significantly associated to that of their friends. Average steps per day were significantly associated with age ($\beta = 499.55$, $p < .001$), sex (male; $\beta = 1,562.77$, $p < .001$), and social barriers ($\beta = 1,019.35$, $p = .01$), while inversely associated with fitness barriers ($\beta = -1,228.29$, $p = .001$). Conclusions: This research suggests adolescents' perceived PA barriers are

significantly impacted by social connections. Researchers and practitioners aiming to reduce barriers may wish to assess peer reinforcing effects, particularly those related to body and social barriers. Similarly, results suggest intervention efforts that consider adolescents' friendship networks could be more effective in increasing activity levels as compared to individual-level interventions alone.

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Network Clustering Based on Team Sport Participation for Adolescents Attending Summer Care Programs

Tyler Prochnow, Megan S. Patterson, Christina Bridges Hamilton, Haley Delgado, M. Renée Umstattd Meyer

Purpose: Adolescent physical activity (PA) is associated with many health benefits; yet, many adolescents are less active during summer. Summer care programs (e.g., Boys & Girls Clubs) can promote adolescent PA while providing opportunities for friendships. Additionally, team sport participation is a positive influence on PA levels and social development. Adolescents are greatly impacted by their social environment, which can be examined by using social network analysis. The purpose of this study was to examine the role of team sport participation on adolescent friendships at a summer care program. Methods: Adolescents at a summer care program completed researcher-administered surveys at the start (T1) and end (T2) of summer. Adolescents self-reported PA, team sport participation, and names of up to five peers whom they hung around with most while at the program. Linear network



autocorrelation models (LNAME) were used to determine if adolescent team sport participation was significantly associated with that of those they hung around with at the program. Results: Adolescents at T1 ($n = 100$; μ age = 9.9 years; $SD = 1.3$; 47% male; 62% black) and T2 ($n = 77$; μ age = 9.8 years; $SD = 1.5$; 51% male; 60% black) reported being active 2-3 hours per week on average. More than a quarter of adolescents at T1 (29%, $n = 29$) and 27% ($n = 21$) at T2 reported team sport participation. LNAME results showed team sport participation was significantly clustered in T1 ($\beta = 0.09$, $p = .003$), but not in T2 ($\beta = 0.03$, $p = .49$). Self-reported PA was significantly associated with team sport participation at T1 ($\beta = 0.22$, $p = .003$), not T2 ($\beta = 0.1$, $p = .12$). Conclusions: While adolescents may come to the program with friends based on team sport participation, the program allowed adolescents, regardless of participation, to become friends. These results suggest summer care programs provide opportunities for adolescents to be active and facilitate friendships regardless of team sport participation. This may be important as communities struggle to maintain organized team sport funding.

Board 130

Assessing Feelings of Social Isolation among Community-dwelling Older Adults

Matthew Smith, Sue Lachenmayr, Leigh Ann Eagle

Purpose: Social isolation among older adults is a complex public health issue, which is associated with an estimated \$6.7 billion in annual Medicare spending. A lack of social

connections has been linked to premature mortality, suicide, and cognitive decline among aging populations. There is a critical demand to develop assessments that identify social isolation risk among older adults and link them to needed resources and services. This study examined associations between the Upstream Social Isolation Risk Screener (U-SIRS) constructs and self-reported feelings of being isolated from others. Methods: The U-SIRS was developed to assess social isolation risk among older adults within clinical and community settings. Comprised of 29 items, the U-SIRS assesses physical, emotional, and social support aspects of social isolation. Using an Internet-delivered survey, data were collected from a national sample of 4,101 adults age 60 years and older. Participants completed the U-SIRS and additional items on sociodemographics and other health risks. A binary logistic regression model with backwards stepwise deletion was performed to identify factors associated with self-reported feelings of being isolated from others. Results: Approximately 35% ($n = 1,442$) of participants reported feeling isolated from others. The average age of participants was 69.9 (± 5.2) years, and the majority were female (58.3%), Caucasian (73.3%), retired (75.6%), and married (52.7%). Participants who had more chronic conditions ($OR = 1.04$, $p = 0.021$) and higher education levels ($OR = 1.18$, $p = 0.007$) were more likely to feel isolated. Participants reporting higher levels of risk in terms of life satisfaction ($OR = 1.43$, $p < 0.001$), perceived belonging ($OR = 2.26$, $p < 0.001$), and depressive symptomology ($OR = 1.99$, $p < 0.001$) were more likely to feel isolated. Conclusion: Findings suggest the need to embed easy-to-use screening assessment

tools into the workflow of clinicians and community providers to identify risk factors and initiate a pathway for older adults to access resources and increase connectivity.

Board 131

An Observational Analysis of ‘Me Too’ Narratives from YouTube

Mandy Spadine, Jordan Nelon, Megan S. Patterson, Sydney Brown, Christina Bookout, Lauren Woods, Sara Fehr

Purpose: The ‘me too’ movement originated to support survivors and exemplify the magnitude of sexual violence victimization. YouTube has become a popular means of expression in younger generations, thus is a common platform for disseminating ‘me too’ narratives. The purpose of this study was to examine how sexual violence narratives resulting from the ‘me too’ movement are being told on YouTube and understand how components of the narratives predict victim-blaming mindsets. **Methods:** Based on predetermined search criteria, researchers identified and screened YouTube videos of people sharing ‘me too’ narratives. The research team developed themes and codes to extract from each narrative, including narrator characteristics, type of violence, perpetrator characteristics, and self-blame. Each ‘me too’ narrative was then watched and coded by two researchers and coded accordingly. Descriptive statistics and a logistic regression were conducted in SPSS using demographic, experience, and attitudinal data to predict victim-blaming mindsets present within videos. **Results:** Sixty-two YouTube videos were included, consisting of 96 individual ‘me too’ stories.

Stories were narrated by 10 males and 86 females, and identified 27 incidents of sexual harassment, 55 incidents of sexual assault, and 20 incidents of rape, with some individuals identifying multiple types of sexual violence. The logistic regression model significantly explained (Nagelkerke $R^2 = .19$, $p = .024$) variance in self-blame. Odds of experiencing self-blame increased 4.859 times if an individual was sexually harassed ($p = .043$) and 6.109 times if an individual was raped ($p = .019$). If the perpetrator was not mentioned in the video, odds of self-blame decreased by 89.4% ($p = .022$). **Conclusions:** While the ‘me too’ movement has empowered sexual violence victims, surprisingly, victim-blaming mindsets were still prevalent within our sample. The findings of this study support the increased awareness of sexual violence through the ‘me too’ movement and the continued need for further education and support for victims.

Board 132

An Exploration of Factors Influencing Standing Desk Use among University Employees

Bushra Salous, Amanda Wilkerson, Adriana Dragicevic

Purpose: Environments in modern society encourage engagement in sedentary behavior (SB), making it a significant public health concern. Health promotion interventions have been developed to address the health risks associated with prolonged sitting and have demonstrated success in changing behavior. Employees working in desk-based jobs spend most of their workday sitting.



Workplace interventions have aimed to reduce SB through the utilization of environmental changes, including the provision of standing desks. Standing desks may promote increased workplace standing and decreased SB through regular, sustained use of the standing desk. The purpose of this study was to explore what sociodemographic, health-related, and psychosocial variables explain employees' standing desk use. Methods: Data collection for this cross-sectional study occurred through administration of an online survey. Participants included full-time employees, working desk-based jobs at a large, public university in the south-central United States. Results: A total of 422 employees participated in the study. Mean age was 43.07 ($SD = 11.35$) years. The majority of participants were married (64.5%), had completed a graduate degree (44.3 %), were female (79.1%), and were white (91.7%). Among the sample, 23.9% of participants currently used a standing desk, and mean standing desk use was 1.9 hours/day ($SD = 1.62$). In the binary logistic regression model ($R^2 = .17$), identifying as female ($OR = 2.21$; 95% CI:1.12,4.37), having a graduate degree ($OR = 2.36$; 95% CI:1.10,5.07), self-efficacy to stand at work ($OR = 1.07$; 95%CI:1.03,1.10), and sedentary behavior knowledge ($OR = 1.12$; 95% CI:1.04,1.21) were significantly related to standing desk use. Conclusions: Findings from this study provide important insight regarding the potential relationship between various sociodemographic, health-related, and psychosocial factors and employees' use of standing desks in the workplace. Researchers and practitioners who are incorporating workplace interventions including the provision of standing desks

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should consider factors in this study when creating intervention strategies to initiate and maintain use of standing desks for reducing sedentary behavior.

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An Innovative Market Research Method for the Promotion of a Behavioral Change Program Targeting University Students

Jennifer Bleck, Christine Haywood, Kaitlyn French, Rita DeBate

Purpose: The University of South Florida's Success & Wellness Coaching program guides students in identifying and attaining self-determined health and wellness goals. The program aims to improve adjustment to college, specifically academic, social, and emotional adjustment, as well as increase confidence, motivation, and readiness towards behavior change. As wellness coaching is a relatively new field, without prior knowledge, students often do not understand exactly what the program is and how it differs from other health and wellness services on campus. Thus, a key aspect for the dissemination and growth of this program is marketing. Specifically, marketing the program to students in an approachable way that is both informative and inviting. This study aimed to develop promotional materials for the coaching program using innovative market research techniques. Methods: Students were recruited through campus listservs to complete an online market research survey. The survey quizzed their knowledge of coaching and then provided a formal definition of coaching. Students were subsequently presented with images and slogans and asked to match them



to develop advertisements. The survey resulted in student-developed promotional materials as well as directly promoted the program to the participants. Results: In total 2,192 students completed the survey. The survey resulted in the development of four advertisements that were used throughout the following semester. During the Fall semester, when staff-developed advertisements were used, there was a total of 165 intake forms completed by students interested in setting up a coaching session. During the following Spring semester, when the student-developed materials were used, the number of completed intakes increased to 337 students. Conclusions: This innovative marketing technique of having students develop their own promotional materials was extremely effective. Moreover, the survey itself served as a marketing tool. Overall this technique increased program utilization and can serve as a guiding method for program marketing.

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Health by Design: Predictors of Health Behavior Change Constructs Related to Intentional Outdoor Nature Contact Behavior

Erin Largo-Wight, Amar Kanekar, Vinayak Nahar, Hana Kusumoto, Stephanie Hooper, Manoj Sharma

Purpose: Finding practical solutions to reduce perceived stress and the related mental, emotional, and physical consequences is an important focus in public health. Contact with nature is one simple way to combat perceived stress without significant behavioral commitment or effort on the part of the individual suffering stress.

Studies have shown that exposure to the outdoors (nature contact) reduces physiological stress and mental fatigue. The purpose of this study was to assess the predictors of behavior change constructs related to intentional outdoor nature contact. Methods: IRB approval was obtained. A random sample of 3,494 undergraduate students were invited to complete a newly validated Multi-theory Model (MTM) instrument measuring intentional outdoor nature contact behavior. Results: A total of 401 students consented to participate in this study (11.5% response rate). Results of stepwise multiple regression for the model explained 57.9% of the variance in initiation of intentional outdoor nature contact, $F(2, 205) = 140.864, p < 0.001$, Adjusted $R^2 = 0.575$. Behavioral confidence (standardized coefficient = 0.591, $p < 0.001$) and changes in physical environment (standardized coefficient = 0.271, $p < 0.001$) statistically significantly predicted initiation for intentional outdoor nature contact. Conclusions: These findings suggest that stress reduction efforts aimed to initiate nature contact behavior should focus on increasing participants' behavioral confidence and provide opportunities for outdoor nature contact through supportive environmental design. Behavioral confidence (efficacy) is central to most behavioral theory and change efforts. The physical environment is a newer, emerging focus. This focus is sometimes called "Health by Design" and assumes that stress reduction and behavior change can be facilitated through changes in the physical environment. This emerging approach in behavior change shifts the focus, and perhaps some of the effort, from the individual to the public health



practitioner designing environments and opportunities to facilitate the change.

Board 136

Reliability and Validity of the Broken Windows Survey

Roy F. Oman, Yueran Yang, Kristen D. Clements-Nolle, Taylor Lensch, Louisiana Sanchez

Purpose: The influence of the neighborhood environment on health behaviors is of growing interest for researchers. One method for assessing neighborhood environment/health behavior associations is the use of relevant census data as a proxy for the neighborhood environment. A potential alternative approach, which may result in more precise and revealing data, is to conduct an in-person assessment of the neighborhood environment by trained raters who systematically tour and assess the physical condition of the neighborhood using the Broken Windows Survey (BWS). The BWS is a new instrument however; and therefore the purpose of this study was to assess its reliability and validity. **Methods:** Participants ($N = 1111$) were recruited through door-to-door canvassing of randomly-selected census tracts and blocks, stratified (by race/ethnicity and income) to participate in a study that assessed prospective associations among the neighborhood environment, youth assets, and youth health-related behaviors. Reliability of the BWS was assessed via a one-year test-retest of 52 randomly-selected census blocks from the original 1047 census blocks

included in the study. Concurrent validity was determined by assessing correlations between the BWS score and the participants' perceptions of their neighborhoods using several established scales (sense of community, informal social control, neighborhood support, concerns related to crime and safety, and concerns related to services). **Results:** Participant demographic characteristics were: 81% female; 56% white, 27% African-American, 12% Hispanic, and 6% other; household income was 49% < \$35,000, 30% \$35,000-\$62,000, and 21% > \$62,000. The Spearman correlation coefficient for the test-retest reliability was 0.83 and the intraclass correlation was 0.80. The Spearman correlation coefficients for the validity analyses ranged from 0.11 (concerns related to safety) to 0.21 (sense of community). **Conclusions:** Reliability of the BWS was satisfactory but validity was low. Further development and testing of the BWS is necessary.

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The Moderating Role of Supervisor Support in The Relationship between Workplace Injury and Work Family Conflict

T. D. Smith, Z. Yu, A. B. Le

Purpose: The purpose of this study is to examine moderating effect of supervisor support on the association between workplace injury and work family interference. **Methods:** The study used a national representative sample of 1,272 adult workers who participated in the 2014 General Social Survey, Quality of Work Life module.

Participants were asked about the frequency of job demands interfering with family life, workplace injury, supervisor support, and other work- and health-related questions. Logistic multiple regression with an interaction term between workplace injury and work family interference was conducted. Results: The study found that the interaction term between supervisor support and workplace injury is significantly ($p = .047$) associated with work interference with family. Without supervisor support, work interference with family is significantly ($p = .036$, $OR = 4.18$) associated with workplace injury. With supervisor support, work interference with family no longer associates ($p = .951$, $OR = .98$) with injury. Results also show that supervisor support is significantly related with ($p = .03$, $OR = .23$) work interference with family among workers who had workplace injury during the past 12 months. Conclusions: Supervisor support is a significant moderator in the association between workplace injury and work interference with family.

Board 138

Trauma and Instability Dimensions of Adversity Contribute to Youth Health Outcomes

Brittany Schuler, Rachel Gardenhire, Shirley M. Moore, E. Borawski

Purpose: Adversity plays a fundamental role in predicting youth health outcomes. However, our understanding of how adversity should best be conceptualized remains elusive; interventions are presently unable to target specific adversities that confer risk. Adversity is typically defined as

a unidimensional construct, but is likely more complex, inclusive of traumatic events (e.g., crime victim, loss of parent) and instabilities (e.g., divorce, food insecurity, moving), which can co-occur and may have differential effects on child health. This study tests whether trauma and instability differentially associate with child health outcomes and behaviors known to increase risk of long-term chronic disease. Method: This prospective study, part of a larger randomized control trial, includes 360 youth-parent dyads recruited from urban Cleveland schools as youth entered 6th grade (T1). Those with a BMI > 85th percentile were eligible and were followed annually for 3 years (T2-T4). We assessed effects of adversity dimensions at T2 (trauma/instability in past year) on health outcomes (change in BMI, blood pressure, cholesterol [HDL], and blood glucose from T1-T4), and behaviors and other more proximal outcomes (caloric intake, physical activity, sedentary behaviors, sleep, stress) at T2 controlling for child sex and age. Results: Youth were primarily female (57.8%, $n = 208$) and non-Hispanic Black (76.7%, $n = 276$). At T1, mean BMI percentile was 95.69 ($SD = 3.72$). Approximately 31% of youth experienced > 1 trauma, and 55% reported some form of instability. Trauma ($b = 2.70$, $p = .04$) and instability ($b = 2.95$, $p = .01$) predicted poorer sleep quality. Instability, not trauma, was predictive of higher stress ($b = 1.10$, $p = .004$), decline in HDL ($b = -.45$, $p = .02$), and increase in BMI ($b = 0.35$, $p < .001$). Stress was predictive of decline in HDL ($b = -.07$, $p = .008$). Conclusion: Trauma and instability-related experiences are associated with lower sleep quality among lower-income overweight and obese youth. Instability, but not trauma, is associated with



decline in HDL and increase in BMI over a 4-year period.

Board 139

Evaluating Youths' Perceived Physical Literacy in Chicago Communities While Attending PlayStreets

Christina Bridges Hamilton, M. Renée Umstatt Meyer, Tyler Prochnow, Haley Delgado, Emily Wilkins, Keshia Pollack Porter

Purpose: Despite numerous benefits of physical activity (PA), many youth, especially those from low-income and/or communities of color, fail to meet PA guidelines. Physical literacy (PL) is a multifaceted conceptualization of knowledge and skills, throughout experiences, required to realize PA potentials. Research examining the role of PL in unstructured PA settings is lacking. PlayStreets provide one example of a free, unstructured PA opportunity for youth. This cross-sectional study describes perceived PL of youth attending PlayStreets and examines potential differences in PL by level of involvement in other PA opportunities. **Methods:** During summer 2018, a trained research team conducted intercept surveys with youth 7-17 years of age at 16 PlayStreets across 10 hosting organizations in Chicago, Illinois. Previously validated questions were used to gather information about youths' perceived PL, previous involvement with PlayStreets or other PA opportunities, and behaviors while attending PlayStreets compared to other PA

opportunities. **Results:** Half (51.5%) of the youth (total $n = 66$; μ age = 10.03 [$SD = 2.3$] years; 57.6% male) attended PlayStreets for the first time during the 2018 season, while 54.5% reported also attending PlayStreets during the 2017 season. Additionally, 53.0% stated they were more active at PlayStreets than other summer days. In the past year, 56.1% played organized sports. The overall average PL score for those with complete data ($n = 61$) was 69.43 (9.79) - moderate perceived PL. There were no statistically significant differences when comparing overall PL score by sex, organized sport participation, or previously attending PlayStreets. However, youth who participated in organized sports had higher self-reported self-efficacy (one component of PL) scores compared with their non-participating peers ($p = 0.005$). **Conclusions:** Findings contribute valuable information to the limited literature regarding PL in unstructured settings. PlayStreets provide PA opportunities for youth with moderate perceived PL. More research is needed to determine if PlayStreets could facilitate increasing youths' perceived PL.

Board 140

The Community of CrossFit: An Examination of the Role of Community Support Relative to Confidence in CrossFit Participation

Michelle R. Strong, Megan S. Patterson, Mandy S. Spadine, Katie M. Heinrich, Shana M. Walsh

Purpose: With the increasing prevalence of sedentary behaviors and associated negative health consequences, exercise promotion has

become a prominent public health focus. CrossFit is a unique exercise program that utilizes high-intensity, functional movement training, and a robust sense of community (SoC) to positively impact its members. The purpose of this study was to assess how SoC relates to confidence levels for CrossFit participants. Methods: All members of a CrossFit gym ($n = 98$) were invited to complete surveys measuring demographic information, perceived health status, SoC, and confidence to continue participating in CrossFit. Sixty members completed surveys (61.2% response rate; mean age = 43.8 years, $SD = 17.8$; 56.7% female). Responses to the 18-item SoC Scale were recoded into six subscales: administrative consideration, common interest, equity in administrative decisions, leadership opportunities, social spaces, and competition. Hierarchical linear regression analyses assessed how individual-level and SoC subscales were related to participants' confidence to participate in CrossFit (measured on a 10-point Likert scale; 1 = not at all confident, 10 = extremely confident). Results: The regression model explained 49.6% of the variance in confidence scores ($p < .0001$), with SoC subscales uniquely explaining 22.9% of the variance ($p < .0001$). Individual variables related to confidence included being male ($\beta = .247, p = .044$) and indicating a higher health status ($\beta = .323, p = .007$), while SoC variables associated with confidence included having common interests and values with other members ($\beta = .360, p = .036$), and bonding over competition ($\beta = .405, p = .017$). Conclusion: This study reveals that greater SoC through shared values and competition within an exercise environment was related to greater confidence in the ability to continue doing CrossFit. Having a

unifying mission and value system, and connecting people through supportive competition, might promote confidence levels for CrossFit members. Using a longitudinal design in future research would help determine if confidence precedes sharing values and competition with other participants, or if increases in SoC influence confidence over time.

Board 142

Development of an Instrument to Evaluate Theory-based Psychosocial Constructs Related to Increased Fiber Consumption

Paul W. Branscum

Purpose: Low consumption of fiber-rich foods (i.e., fruits/vegetables) is commonly cited as a causal factor for obesity. The Reasoned Action Approach (RAA) is an emerging theory in social and behavioral science, and valid and reliable surveys have yet to be developed for this model. Therefore, the purpose of this study was to show the development of an instrument measuring the RAA constructs with regards to fiber consumption. Methods: Constructs of the RAA were first constitutively and operationally defined. Next, a qualitative study was utilized to elicit behavioral beliefs (advantages/disadvantages), injunctive (referents who approve/disapprove) and descriptive normative beliefs (referents who are most/least likely), and control beliefs (factors that enable/prevent). Afterwards, a panel of 6 experts established face and content validity of the survey. Finally, data were collected from an adult sample ($n = 878$), and psychometric data revealed indices of construct validity (confirmatory

factor analysis) and internal consistency reliability (Cronbach's alpha). Results: The average age of adults was 51.5 years (± 12.8), and a majority were Caucasian (81%), and women (93%). Results showed the top beliefs as: behavioral beliefs [a) lose weight, b) have more energy,]; injunctive beliefs [a) parents, b) doctor]; descriptive belief [a) people who are trying to lose weight, b) friends]; and control beliefs [a) planning meals ahead of time, and b) having someone else plan meals]. With regards to construct validity, the model had adequate fit [RMSEA = 0.063; TLI = 0.952; CFI = 0.960], and all items significantly loaded on its corresponding scale. Cronbach's alpha scores were > 0.70 . Conclusions: Overall this survey appears to be promising for helping researchers and practitioners study the determinants of fiber consumption, and its theoretical antecedents. Understanding the theoretical determinants of fiber consumption will help bridge the gap between theory and practice, and provide health practitioners information to aid in the development of effective public health interventions.

Board 143

Leisure Time Physical Activity and Sedentary Behavior Partially Mediate the Income-Overweight/Obesity Relationship

Layton Reesor-Oyer, O'Connor Daniel, Rosenda Murillo, Emily Lavoy, Daphne Hernandez

Purpose: Obesity is highly prevalent among individuals with low income (FPL $\leq 130\%$: 39% vs. FPL $\geq 350\%$: 31%). Additionally, those with low income are disproportionately affected by a lack of leisure time physical

activity (LTPA), which is known to be protective against overweight/obesity. Less is known about how income is related to sedentary behavior (SB), but SB has been associated with placing adults at risk for overweight/obesity. Whether LTPA and SB mediate the relationship between income and overweight/obesity is unclear. We aimed to evaluate LTPA and SB as mediators of the income-overweight/obesity relationship. Methods: Using the National Health and Nutrition Examination Survey (2007-2014), the sample included non-aging adults (ages 20-59) with complete data on target variables ($n = 5,696$). A structural equation model with multiple mediators was conducted to evaluate if LTPA or SB mediated the relationship between income and overweight/obesity (BMI ≥ 25), controlling for a number of known confounding variables (e.g., diet, age, etc). Results: Greater income was associated with decreased odds of overweight/obesity ($OR = 0.93$; $B = -0.08$; 95%CI = -0.12,-0.03). Income was positively associated with LTPA ($B = 0.16$; 95%CI = 0.02,0.30) and SB ($B = 0.22$; 95%CI = 0.16,0.29). LTPA was associated with decreased odds of overweight/obesity ($OR = 0.99$; $B = -0.02$; 95%CI = -0.02,-0.01), while SB was associated with increased odds of overweight/obesity ($OR = 1.04$; $B = 0.04$; 95%CI = 0.02,0.06). There was a significant indirect effect from income to overweight/obesity through LTPA ($B = -0.002$; 95%CI = -0.01,0.00) and SB ($B = 0.009$; 95%CI = 0.01, 0.02). The direct effect from income to overweight/obesity remained statistically significant ($B = -0.08$; 95%CI = -0.12;-0.03). Indices of model fit are presented [RMSEA: 0.08 (90% CI: 0.06, 0.11); SRMR: 0.01; CFI: 0.96]. Conclusions: LTPA is an important health behavior, which partially accounts for

the relationship between income and overweight/obesity. Decreased SB among those with lower income may provide some overweight/obesity protection among a vulnerable population. It is recommended that interventions aimed at preventing overweight/obesity among low-income populations focus on increasing LTPA, rather than decreasing SB.

Board 144

Perceived Social Support Mediates the Association between Cumulative Health Risk on Poor Mental and Physical Health Outcomes among Homeless Adults

Sajeevika Daundasekara, Daphne Hernandez, Adam Alexander, Diane Santa Maria, Lorraine Reitzel, Darla Kendzor, Michael Businelle

Purpose: Individuals experiencing homelessness are at greater risk of exposure and vulnerability to health risk factors leading to diminished physical and mental health. However, evidence is lacking on the role of social support in the association between health risk factors and negative health outcomes among homeless adults. **Purpose:** To evaluate the potential mediation role of social support on the association between cumulative health risk and various poor health outcomes among homeless adults. **Methods:** Adults experiencing homelessness were recruited from six homeless shelters in Oklahoma City ($n = 567$). Participants' health outcomes included depression (Patient Health Questionnaire), post-traumatic stress disorder (PTSD symptoms; Primary Care PTSD screener), and self-rated overall health status (1 =

Excellent to 5 = poor). A latent construct of the cumulative health risk (CHR) was constructed from urban life stress (Urban Life Stress Scale), perceived stress (Perceived Stress Scale) and distress intolerance (Distress Tolerance Scale), with higher values representing greater risk. The mediating variable measured perceived social support (PSS; Interpersonal Support Evaluation List-12). Covariate-adjusted structural equation mediation models were conducted to evaluate the indirect effects of CHR on the various health outcomes through PSS. Results: A majority of the sample were males (63%) and white/non-minority (57%). Thirty-one percent of the participants had depression, 32% had PTSD symptoms, and 37% had poor/fair health. According to the bootstrapped 95% confidence intervals (CI), the indirect effect of CHR on depression through PSS ($b = 0.160$, 95%CI = 0.059,0.155) and CHR on poor health through PSS ($b = 0.052$, 95%CI = 0.006, 0.103) was significant. The indirect effect of CHR on PTSD symptoms through PSS was not significant ($b = 0.045$, 95%CI = -0.003,0.093). Conclusions: Social support partially mediates the association of cumulative health risk on depression and poor health. Providing social support in the form of appraisal, belonging, and tangible support could potentially reduce depressive symptoms and improve health status among homeless adults.

Board 145

Influence of Grandparental Childcare on Childhood Obesity: A Systematic Review and Meta-analysis



Ruopeng An, Xiaoling Xiang, Na Xu, Jing Shen

Purpose: This study systematically reviewed the scientific literature on the relationship between grandparental childcare and childhood obesity. **Methods:** Keyword/reference search was performed in CINAHL, PsycINFO, PubMed, and Web of Science. Meta-analysis was conducted to estimate the pooled effect of grandparental childcare on children's weight outcomes. **Results:** A total of 23 studies were identified, including nine longitudinal, nine cross-sectional, two case-control, and three qualitative studies. Eight studies were conducted in China, five in Japan, three in the United Kingdom, two in the United States., and one in five other countries each. Twelve studies focused on grandparents' role as a main caregiver in the family, and seven on grandparents' co-residence. Data from 14 studies were used in meta-analysis, 10 focusing on childhood overweight/obesity and the other four on children's BMI z-scores. Meta-analysis found that grandparental childcare was associated with a 30% (95%CI = 21%,40%) increase in childhood overweight/obesity risk. Grandparental childcare was not associated with children's BMI z-scores after correcting for publication bias. Meta-regressions revealed no difference in the estimated effect of grandparental childcare on children's weight outcomes by country or grandparents' specific role (main caregiver in the family vs. co-residence). **Conclusions:** Preliminary evidence links grandparental childcare to elevated risk of childhood overweight/obesity but not BMI z-scores. Future research should focus on a specific child age group within a country, adopt systematic and field-validated measures on grandparental childcare, and elucidate the

pathways linking grandparental childcare to children's weight outcomes.

Board 146

Obesity-Sleep-based Predictors of Cardio-metabolic Disease Risk Factors

Adam Knowlden, John Higginbotham, Michael Grandner, John Allegrante

Purpose: In the United States, 37.9% of adults are classified as obese and 35.3% receive fewer than 7 hours of sleep on an average night. There has been an increased interest in the potential link between obesity and short sleep; however, a comprehensive model has remained elusive. **Methods:** A large-scale survey ($n = 1,000$) was employed to recruit 159 subjects (53 normal weight, 53 overweight, and 53 obese) assessed over two phases. Phase 1, an in-lab study, gathered objective adiposity indices (air displacement plethysmography and anthropometrics) and cardiometabolic data (blood pressure, pulse wave velocity/analysis, blood-based biomarkers). Phase 2, a one-week, home-based study, gathered sleep-related data (sleep apnea, actigraphy, sleep diaries). During Phase 2, demographic and socioecological data were collected to contextualize hypothesized adiposity and sleep-associated cardiometabolic disease risk factors. **Results:** Analysis found mean sleep hours were 7.08 ($SD = 1.3$) for normal weight individuals; 6.84 hours ($SD = 1.3$) for overweight individuals; and 6.72 hours ($SD = 1.3$) for obese individuals. Short sleep was associated with greater obesity risk in men between the ages of 18 and 74, with odds ratios (ORs) ranging from 1.19 (both 18-25 and 70-74) to 1.41 (both 30-34 and 35-39).



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For women, short sleep was associated with obesity for ages 18-69, with ORs ranging from 1.23 (65-69) to 1.64 (30-34). Short sleep duration was more prevalent among men than women between the ages of 25 and 49. Both sexes had relatively equal prevalence rates of short sleep duration from ages 50 to 64, after which short sleep became more prevalent among women. Conclusions: This investigation contributed to the develop-

ment of a comprehensive adiposity-sleep model. Objective, empirical data regarding the interaction between adiposity and sleep, contextualized within a socioeconomic framework, are important for understanding the pathogenesis of cardiometabolic disease and for developing health behavior interventions to prevent its conception and treat its consequence.



Board 201

**Health Provider Knowledge and Practices
Regarding Teen E-cigarette Use**

Kelli J. England, Ann L. Edwards, Amy C. Paulson, Paul T. Harrell, Emily R. Gordon, Emily L. Putnam

Purpose: Electronic cigarettes (ENDS or vapes) are the most common form of tobacco use among adolescents, yet youth and the public undervalue the associated risks of vaping. This project aimed to assess adolescent health provider knowledge, preventive guidance practices, and resource needs regarding electronic cigarettes. **Method:** Participants ($N = 102$) included physicians ($n = 35$) and nurses ($n = 67$) working in pediatric and adolescent medicine practices in a large medical group network in southeastern Virginia. An anonymous online questionnaire assessed provider knowledge of e-cigarettes/vaping, and how the topic was addressed within their practice. **Results:** Physicians' self-assessment indicates that 51.5% feel they have enough information to counsel teens on the harmful effects of vaping, compared to only 14.5% of nurses. While both nurses and physicians feel the topic is important, most providers reported never or rarely asking teens about vaping during a well visit (44.2%) or addressing potential harms of teen vaping (63.8%). If a question regarding vaping was included in the Electronic Medical Record, providers were almost 4 times more likely to report always asking teens about vaping (OR: 3.89, 95%CI: 1.10-13.75). Both physicians (77.1%) and nurses (46.3%) feel the physician should be the one within the practice who provides teens with information on vaping; however, significant barriers to

preventive guidance were noted, including lack of time, insufficient knowledge and resources, ambiguity regarding the topic, and competing patient/family needs. Physicians reported that if a teen reports vaping, they are most likely (68.6%) to verbally counsel the teen. However, nurses (41.8%) reported they did not know the next step to take if a teen says s/he vapes. Overall, providers reported they are eager for tools, staff education, resources, and materials that are specific to each setting, audience, and purpose (e.g., prevention or cessation). **Conclusions:** Health providers support preventive guidance around e-cigarettes, but need additional resources and education.

Board 202

**Prevalence and Correlates of Tobacco,
Alcohol, and Non-medical Opioid Use
Among Women of Reproductive Age in
the United States**

Qiping Fan, Md Mahbub Hossain, Maria Roque, Bangning Zhang, Lisako McKyer, Ping Ma

Purpose: Substance use during childbearing age is among the strongest and most preventable risk factors for future adverse birth outcomes. Therefore, this study aimed to examine the prevalence and correlates of tobacco, alcohol, and non-medical opioid use among a national sample of U.S. women of reproductive age. **Methods:** We used the population-based National Survey on Drug Use and Health (NSDUH) in 2017 to examine three binary measures of substance use in the past 30 days including: any tobacco use, alcohol use, and opioid misuse. Age,



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race, education, employment, income, marital status, mental health status, and coverage of health insurance were included as covariates. Descriptive analyses, as well as bivariate and multivariate associations, were examined using Stata 15.0. Results: Of 19,283 women of reproductive ages 15-44, the prevalence rate of past month alcohol consumption, tobacco use, and non-medical opioid use was 48.95% ($N = 9439$), 21.0% ($N = 4,051$), 1.73% ($N = 334$) respectively. Specifically, tobacco and alcohol use in the past month were both associated with older age, non-Hispanic ethnicity, non-married status, higher education, and family income. Non-medical opioid use in the past month was significantly associated with unemployment (AOR 2.7, 95%CI 1.8-3.8). Notably, women who used non-medical opioids in the past month had over five times higher likelihood of co-using tobacco and over two times higher likelihood of co-using alcohol products, respectively, after covariates were adjusted. Conclusion: Alcohol and tobacco use rate is high among U.S. women of reproductive age. Given the deleterious consequences of substance use, a tailored comprehensive prevention effort targeting the treatment of co-use of alcohol, tobacco, and opioid use is warranted.

Board 203

A Retrospective Examination of a University Success and Wellness Coaching Program

Amy Gatto, Jennifer Bleck, Rita DeBate

Purpose: Success & Wellness Coaching (SWC) provides students with a coach who

helps guide, assist, and hold students accountable in order to promote personal goals attainment and adoption of desired behaviors. This research analyzes (1) student satisfaction with the coaching intake process, (2) students' relationships with their coaches, and (3) how SWC affects students' self-efficacy to work towards their individual goals. Methods: The final sample included 123 students who had expressed interest in SWC, of which 85 students attended at least one SWC session. Constructs assessed include satisfaction with coach, satisfaction with intake process, usage of coaching services, self-efficacy towards goal achievement, and perceived success of the program. Results: Preliminary analysis revealed that the majority of students who participated in SWC attended 1-5 sessions ($M = 4.04 \pm S.D. = 2.86$) on a weekly, bi-weekly, or sporadic basis. Regarding the intake process, the majority of students agreed that it was easy to schedule an appointment (88.2%), coaches were available (94.6%) and flexible (89.1%) for scheduling, and meeting locations were private (76.9%). In total, 29.5% of participants believed they met their initial goals and 65.4% had begun to make or had made progress on their goals. In regards to self-efficacy, the majority felt that SWC increased their confidence (68.4%) and motivation (73.4%) towards reaching their goals. Most students felt that SWC helped them overcome barriers (70.9%) and increased their use of goal setting skills (67.0%) and problem solving skills (59.4%). Overall, 55.7% of student participants felt that SWC helped them change their behavior. Of the SWC participants, over 95% said they would recommend SWC to a friend. Conclusions: SWC is effective in helping



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college students identify and work towards their individual goals, thus improving student success. Further, these findings provide insight for improving the process of implementation of wellness coaching programs at universities.

Board 204

Assessing Associations between Viewership and Perceptions of Health Themes among Audience Members of a West African Serial TV drama C'est La Vie (CLV)

Deborah Glik, Philip Massey, Matthew Kearney, Alex Rideau, Cheikh Niang

Purpose: We assessed how exposure to a French West Africa produced serial television program, C'est la Vie, with explicit health storylines is associated with beliefs and perceptions among viewers compared to non-viewers. **Methods:** We used tablet technologies at local markets in 4 geographic regions of Senegal to collect intercept surveys in late 2017. Data collection with graduate students from the University in Dakar comprised research training workshops to pretest and field questionnaires. Students also learned descriptive and bivariate survey analysis techniques. **Results:** Among all respondents ($n = 1494$), media utilization source varied by mean age, older respondents using radio (37 years) and television (35 years), and younger respondents using cellphones (29 years) and internet (29 years). CLV exposure also varied as 334 heard of CLV (22.4%) and 136 watched CLV (9.1%). More women than men had heard of and watched CLV

($p < 0.001$), and audience members were significantly younger (30 years vs. 33 years, $p = 0.0086$). Compared to non-viewers, viewers were more likely to have heard of the morning after pill ($p < 0.001$), know about ($p = 0.001$) and been tested for an STI ($p = 0.014$), and been tested for HIV ($p < 0.001$). Viewers were more likely to use Facebook and WhatsApp ($p < 0.001$). **Conclusions:** CLV engages younger and more female audiences, a key target for family planning and reproductive health topics. Defining audience characteristics is an important tool to cultivate audiences as well as to identify opportunities to expand audience share and communicate about important health topics. Graduate students from Universite Cheikh Anta Diop learned the basics of survey research as well in this project.

Board 205

Students' Willingness to Abide by a Vape-free Campus Policy: Implications for Policy Implementation

Anna E. Greer, Kerry Morgan, Jessica Samuolis, Gabrielle Diaz, Kylie Elimanco

Purpose: Little is known about college students' attitudes towards vape-free campus policies. This study examined 1) college students' willingness to abide by a vape-free campus policy, and 2) factors associated with students not being willing to abide by a vape-free campus policy. **Methods:** We used purposive and snowball sampling to recruit 1,229 college students (response rate = 25%) attending a northeastern U.S. university to complete a questionnaire about vaping. 832

students reported ever vaping and were included in the analyses described below. We asked students about their demographic characteristics (gender, white/nonwhite, age), if they would abide by a vape-free campus policy (yes/no), and the campus locations (i.e., housing, library, outdoors, campus) in which they have vaped (yes/no). As potential indicators of nicotine dependence, we asked students if they were daily vape users (yes/no) and if they own their own vaping device (yes/no). We analyzed the data in SPSS using descriptive and chi square statistics. Results: Most respondents were white (84.0%) females (63.2%) with an average age of 19.73 years ($SD = 1.39$). Over half (51.0%) of students reported they would not abide by a vape-free campus policy. A greater percentage of daily users ($p < .001$) and device owners ($p < .001$) reported they would not abide by a vape-free policy compared to non-daily users, and non-owners. A greater proportion of students who reported vaping in campus housing ($p < .001$), the library ($p < .001$), class ($p < .001$), and walking outdoors on campus ($p < .001$) reported they would not abide by the policy than students who did not report vaping in those locations. Conclusions: Implementation and enforcement strategies are needed that address vape use across campus settings. Universities might consider education about reasons for the policy (e.g., health, safety), free cessation support for nicotine dependent students, and plans to obtain faculty and staff buy-in to consistently enforce policies across campus.

Board 206

An Exploration of the Relationship between Health, Eating Behavior, and School Engagement

Kerry Howard, Sarah Griffin, Laura Rolke, Tracy Waters, Mackenzie Stuenkel, Kerry Sease

Purpose: A positive link between school engagement and academic achievement is consistently shown in the literature. However, while healthy behaviors have been shown to predict academic achievement, research has not explored the relationship between healthy behaviors and school engagement. The objective of this study was to explore the relationship of eating behaviors, mental wellbeing, and physical health with self-efficacy for school engagement. Methods: The sample consisted of 1,540 students from eight public middle schools in the southeastern United States who completed an academic and health behaviors survey in Fall 2018. The outcome measure, self-efficacy for school engagement, was computed from students' level of agreement with statements such as "I keep doing schoolwork even if it's hard" and "I like learning new things in school." Responses were coded and summed for a maximum composite score of 36 ($M = 25.73$, $SD = 6.55$). For eating behaviors, students reported frequency of consumption of fruits, vegetables, sports drinks, and soda in a week and were characterized as meeting or failing to meet Center for Disease Control guidelines. For mental and physical wellbeing, students characterized their mental and physical health as "Excellent," "Good," "Fair," or "Poor." A multiple linear regression was run. The most novel finding



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was that meeting eating behavior guidelines was highly predictive of self-efficacy for school engagement for all food categories ($ps < .04$). Additionally, mental and physical wellbeing were most predictive, showing a 3.56-point and 2.08-point increase in the outcome, respectively, between those rating their health as “Excellent” or “Good,” compared with “Fair” or “Poor.” These results are consistent with the literature on the positive relationship of healthy eating behaviors, mental wellbeing, and physical health with school-related domains; however, this study extends the research beyond academic achievement. These findings reiterate the importance of schools promoting opportunities for healthy behaviors in encouraging students to positively engage in school.

Board 207

Sociodemographic Factors Related to Concurrent Use of Electronic Cigarettes and Marijuana in a National Sample of College Students

Shu-Tzu Huang, Rebecca Vidourek, Keith King

Purpose: This study aimed to identify sociodemographic factors that were related to the concurrent use of electronic cigarettes and marijuana in the past 30 days among college students in the United States. **Methods:** The research team conducted a secondary data analysis with Spring 2018 data from the American College Health Association - National College Health Assessment II (ACHA-NCHA II). Participants were college students in the

voluntarily participating universities across the country. Logistic regression analyses were performed to examine the relationships between concurrent use of electronic cigarettes and marijuana in the past 30 days and sociodemographic variables including gender, race/ethnicity, grade level, enrollment status, international student status, relationship status, residence type, Greek member affiliation, grades, and participation in college athletics. **Results:** There were 88,178 college students who completed the survey. The prevalence of concurrent use of e-cigarettes and marijuana in the past 30 days was 5.2% in 2018. Results of the univariate logistic regression analyses revealed that all sociodemographic variables were associated with concurrent use of electronic cigarettes and marijuana. After controlling for the effects of other independent variables, the final multiple logistic regression model indicated that students who were male or of non-binary gender, white, in the 1st or 2nd year, full-time students, not in a relationship, living in college housing, Greek members, with poorer grades, and college athletes were more likely to report using both electronic cigarettes and marijuana in the past 30 days. **Conclusions:** Over 1 in 20 college students used both electronic cigarettes and marijuana recently that may pose harm to their health. Multiple sociodemographic factors were identified in this study. It is urgently warranted to develop and implement prevention interventions targeting at-risk populations to address this emerging public health problem.

Board 208

Correlates of Positive Drug Expectancies Among Hispanic Adolescents: A Test of the Theory of Triadic Influence

Wura Jacobs, Lauren Bartoszek, Jennifer Unger

Purpose: Expectancies toward drug use develop during adolescence. These drug use expectancies are reinforced as they initiate and maintain use. Understanding their development is important for prevention efforts. This study employs the Theory of Triadic Influence (TTI), which articulates the different variables that influence health-related behaviors into streams of influence— intrapersonal, social, and cultural—to better understand factors that influence positive drug use expectancies (PDE) among Hispanic adolescents. Methods: Data for the study came from Project RED, which included 1,963 high school students in Southern California. The relationships between participants’ drug expectancies and different streams of influence were examined using regression analysis. Results: Participants were mostly females (54.2%); with a mean age of 17.13 years. In the first model, assessing the cultural stream, controlling for other covariates, there were no variables associated with PDE. Model 2, assessing social environment stream of influence, had a strong association with PDE (adjusted $R^2 = 0.25$). PDE significantly increased with drug use consequences ($\beta = .48$), parent ($\beta = 1.28$) and sibling ($\beta = 2.97$) alcohol use, and peer approval of alcohol use ($\beta = 2.0$). PDE decreased with increasing parental communication ($\beta = -.22$) and peer disapproval of marijuana use ($\beta = -5.2$). The third model, including intrapersonal factors

was significant (adjusted $R^2 = 0.26$). Regression showed a significant positive relationship between PDE and drug use consequences ($\beta = .47$), parent ($\beta = 1.06$) and sibling ($\beta = 2.97$) alcohol use, peer approval of alcohol use ($\beta = 2.05$), and stress ($\beta = .23$). There was a negative significant relationship with parental communication ($\beta = -.21$), peer disapproval of marijuana use ($\beta = -5.2$), and depression ($\beta = -.09$). Conclusions: Findings from this study help organize and clarify the important influences associated with PDE among Hispanic adolescents. Leveraging the ordering and categorizations suggested by the TTI sheds light on the importance of social streams of influence and what shapes them and could help identify targets for interventions.

Board 209

Pregnancy-associated Changes in Cigarette Preference among Reproductive Age Smokers

Wasantha Jayawardene, Abdullah Alanazi, Jon Agle

Purpose: Pregnancy-related changes in preference for flavors may influence “flavored-cigarette” use during pregnancy, potentially promoting continued smoking during pregnancy. Furthermore, labelling of cigarettes as “ultra-light” or “light”, if they delivered low tar, was banned in 2010, as it misrepresents them as less harmful, but terminology remains in use among smokers. If women who cannot quit smoking during pregnancy want to reduce harmful effects of smoking, they may switch to ultra-light or light cigarettes. This study examined whether

pregnant smokers have different cigarette preferences, compared to their demographically matched peers who smoke currently. Methods: Data for female, reproductive age (18-50yrs) current smokers ($N = 45,207$) were drawn from 2013-2017 samples of National Survey on Drug Use and Health. Logistic regression-based propensity score matching was conducted to draw 597 non-pregnant women, matched with 597 pregnant women on age category, race, ethnicity, and education level (exact matches = 486, fuzzy matches = 111). Differences in smoking frequency and cigarette preferences between pregnant and non-pregnant women as well as between trimesters were compared using chi-square tests. Results: Among current smokers, daily smoking was high, but no difference was observed between pregnant (61.7%) and non-pregnant (58.1%) women. Contrary to hypothesis, pregnant smokers reported lower use of ultra-light (2.5% vs. 5.4%; chi-square = 6.4; $p < 0.02$) and light (20.9% vs. 30.1%; chi-square = 13.0; $p < 0.001$) cigarettes, but greater use of full-flavor/regular cigarettes (65.5% vs. 53.8%; chi-square = 16.8; $p < 0.001$). No difference was observed for medium (pregnant = 11.0%, non-pregnant = 10.7%) and menthol (pregnant = 52.4%, non-pregnant = 53.6%) cigarettes. Across trimesters, daily smoking linearly increased (first = 54.0%; second = 62.1%; and third = 71.9%; chi-square = 12.9; $p = 0.002$), but cigarette preferences did not vary significantly. Conclusions: Despite well-known multigenerational effects of maternal smoking, daily smoking remained high among pregnant smokers, and worsened from first to third trimester, suggesting a critical need for interventions. Findings which indicated that some women may have

switched from less-flavorful to full-flavor/regular cigarettes during pregnancy warrant further research.

Board 210

Using Social Media to Recruit Viewers of the African Health Education Series “C’est La Vie!”

Matthew Kearney, Janet Kim, Deborah Glik, Philip Massey

Purpose: “C’est la Vie!” (CLV) is a French-language serial drama and transmedia program produced in Dakar, Senegal and broadcast throughout an expanding range of West and Central African nations. CLV promotes reproductive health and human rights. To evaluate CLV’s audience impact, a survey was recently launched that targeted viewers and non-viewers of the show. Methods: Participants were recruited for a cross-sectional survey in July and August of 2019 through posting public links in paid and unpaid content on Facebook and YouTube pages that were associated with “C’est La Vie!”. Surveys were collected via Qualtrics and included knowledge and attitude questions about sexual violence, emergency contraception, female circumcision, and HPV. Descriptive and bivariate analyses were conducted in Stata IC (version 15). Results: A total of 735 participants completed the survey, of whom 87.2% ($n = 641$) were show viewers. Viewers were typically 23 years old (median), Senegalese (51.6%), female (78.7%), urban (90.3%), and had at least some college education (76.8%); compared to viewers, non-viewers were significantly more likely to be male



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($p < .001$), rural ($p = .018$), and less than college educated ($p = .004$). Compared to non-viewers, CLV viewers were more likely to have heard about emergency contraception ($p < .001$), but had less awareness of HPV ($p = .043$), and viewers were more likely to have visited a health professional in the previous 12 months ($p = 0.013$). More viewers than non-viewers disagreed that female circumcision should be continued (91.6% viewers versus 66.7% nonviewers; $p < .001$). Conclusion: Viewers differ from nonviewers not just demographically, but also in their health knowledge, attitudes, and behaviors. Social media platforms are effective recruitment tools for exploring health trends among hard-to-reach populations, particularly in regions where internet access and social media use are expanding rapidly. Findings from our survey suggest future directions for CLV's production, as well as where and how to evaluate its impact on audience health.

Board 211

Who Purchases Tobacco Online? Findings from Youth and Adult Tobacco Users

Jessica L. King, Nicole Nicksic, Hollie Tripp, Julie W. Merten

Purpose: Purchasing tobacco products online is easy and convenient. However, there are no national studies examining the prevalence of Internet tobacco purchases. We examined prevalence of purchasing online by tobacco product among past 30-day tobacco users, as well as the association between Internet tobacco purchases and demographic characteristics. Methods: We analyzed

Waves 1-3 (2013-2016) of the Population Assessment of Tobacco and Health (PATH) youth (aged 12-17) and adult studies. Weighted descriptive analyses identified the prevalence of usually purchasing tobacco from the Internet among past 30-day users. We conducted multinomial logistic regressions to test associations between purchasing any tobacco products online and demographic variables (i.e., age, sex, race, ethnicity, education, and income). Results: Across all three waves, approximately 25% of adults and 10% of youth reported past 30-day tobacco use. Of those, 3% of adults (generalizing to a U.S. population N of approximately 2 million) and 3% of youth ($N = 30,000$ youth) reported usually purchasing tobacco online. E-cigarettes and traditional cigars and e-cigarettes and cigarillos were the products most commonly purchased among adults and youth, respectively. Among adults, males, those with higher income, and those with more education had greater odds of purchasing any tobacco products online (each $p < .05$). Among youth, 12-14 year olds were more likely than 15-17 year olds to report purchasing any tobacco products online ($p < .05$). Conclusions: The Internet is not the most popular source for purchasing tobacco. However, approximately 30,000 youth reported using the Internet as their usual method of purchase, particularly younger youth (aged 12-14). Efforts are needed to ensure Internet tobacco purchasing regulations are enforced.

Board 212

Visual Attention to Sponsored Content Labeling on Social Media



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Elizabeth G. Klein, Kristin Roberts, Rebecca McAdams, Jennifer Manganello, Lara McKenzie

Purpose: The Federal Trade Commission (FTC) has recently issued warning letters to e-cigarette companies who used social media (SM) endorsers or influencers to promote their products without labeling the content as advertisements through SM channels. The FTC requires a disclosure that is “unambiguous” and easily noticed, but there is no specific guidance for how to indirectly label sponsored SM posts. The goal of this research was to examine visual attention to a potential sponsored social media labeling strategy (#sponsored). **Methods:** Using a within-subjects design, participants ($n = 150$) were exposed to seven health-related SM posts that included imagery, health messaging, links and/or hashtags; one SM post included labeling to identify the content as #sponsored for the e-cigarette product JUUL. An eye-tracking system captured precise visual attention (in milliseconds, or ms) to each post while participants viewed ad libitum; areas of interest were drawn around hashtags and URL links to examine the total dwell time spent on each element, and the relative proportion of time spent. Analyses included descriptive statistics displaying percentages and means compared using a paired t-test. **Results:** Participants were predominantly female (70.6%), married (61.3%), with some college or less (50%), and aged 32.8 years. Dwell time on the sponsored JUUL post was primarily spent on the textual information (9.5 seconds), followed by visual imagery (301 ms), #sponsored (189 ms), and retweets (134 ms). Participants spent roughly 1 percent of viewing time on the #sponsored labeling.

Compared to the percentage of viewing time for comparably sized tags and links, #sponsored attracted significantly less viewing time ($p < 0.001$). **Conclusions:** Visual attention to the #sponsored labeling strategy attracted very little visual attention on social media. There is a need for more in-depth testing of strategies to attract visual attention to disclosures for sponsored content that are easily noticeable by consumers.

Board 213

Nicotine Product Use Trajectories among Adolescents

Elizabeth Kwon, Dong-Chul Seo, Hsien-Chang Lin

Purpose: The introduction of e-cigarettes has raised a public concern as numerous studies have found an association between e-cigarette use and subsequent cigarette smoking initiation. However, there is a paucity of data on use trajectories of e-cigarettes other than the transition from e-cigarette use to subsequent cigarette smoking initiation. A better understanding of longitudinal trajectories of nicotine product use among adolescents would inform prevention efforts. **Methods:** Waves 1, 2, and 3 data from the Population Assessment of Tobacco and Health (PATH) Study, a nationally representative longitudinal survey, were analyzed. Group-based trajectory modeling (GBTM) was conducted to identify nicotine product use trajectories, and weighted multinomial logistic regression was conducted to identify predictors of nicotine product use trajectories among adolescents aged 12-17 years at baseline. **Results:** Four

trajectory groups were identified: (1) abstainers (72.1%); (2) dual users of cigarettes and e-cigarettes (15.0%); (3) poly nicotine product users with increasing risk (6.7%); and (4) chronic tobacco users who increasingly replace tobacco products with e-cigarettes (6.2%). Memberships in higher risk groups were predicted by lower parent education, modified family structure, and alcohol and marijuana use ($ps < 0.05$). Conclusions: These results imply that harm reduction, which has been discussed mainly for adult smokers, might apply to adolescent smokers as well. Adolescent tobacco product users who appear to have switched to e-cigarettes (Group 4) have been neglected by researchers, perhaps because harm reduction was not a popular research topic for this population, especially compared to e-cigarettes' effects on cigarette smoking initiation. The current study suggests that the switching from tobacco product to e-cigarette use among adolescents may be as common as poly nicotine product use and therefore warrants more research.

Board 214

The Implementation of a Tobacco-free Workplace Program at a Community, Non-profit Substance Use Treatment Center: A Case Study

Kathy Le, Virmarie Correa-Fernandez, Isabel M. Leal, Bryce Kyburz, Tzu-An Chen, Daniel Barrientos, Elma Saenz, Teresa Williams, Dan P. O'Connor, Ezemenari M. Obasi, Kathleen Casey, Lorraine R. Reitzel

Purpose: About 70-80% of individuals in substance use disorder treatment smoke cigarettes, compared to 14% in the general adult population. Substance use treatment centers (SUTCs) often do not engage in tobacco cessation interventions, such as use of the 5As (Ask, Advise, Assess, Assist, Arrange), due to a lack of clinician training and the misconception that tobacco cessation hinders recovery efforts. To address this, Taking Texas Tobacco Free (TTTF) implements an evidence-based tobacco-free workplace program in SUTCs. Billy T. Cattan Recovery Outreach (BTCRO) is a participating outpatient SUTC serving over 370 clients annually. Here, we present an in-depth case study of TTTF's implementation there. **Methods:** TTTF provided tobacco-free policy development assistance, technical assistance, and educational and skill-building training for BTCRO clinicians ($N = 6$) over ~6 months. Compliance with the tobacco-free policy was assessed by self-report. Clinician knowledge gain was assessed by percentage comparisons of correct items on a 10-item test pre- and post-training. Pre- and post-implementation surveys assessed change in clinical practices regarding tobacco use intervention using Chi-squared tests; tobacco use assessment (TUA) and nicotine replacement therapy (NRT) provision was assessed quarterly and summed. **Results:** All clinicians reported compliance with the tobacco-free policy. Clinicians demonstrated a 20% knowledge gain following educational training. Prior to implementation, 17% of clinicians reported providing tobacco treatment to smokers, compared to 100% after implementation ($p < 0.05$). From pre- to post-implementation, clinicians increased use of the 5As into routine clinical practice



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($p > 0.05$). Since becoming 100% tobacco-free in April 2018, BTCRO has administered TUAs to 436 clients (246 reported tobacco use) and dispensed NRT to 153 clients – a 62% rate of client quit attempts using NRT. Conclusions: BTRCO's successful implementation and maintenance of a tobacco-free workplace program serves as a model for other SUTCs. This presentation will describe implementation processes, success factors, challenges, and lessons learned.

Board 215

A Prospective Longitudinal Relation between Elevated Use of Electronic Devices and Use of Electronic Nicotine Delivery Systems

Shieun Lee, Dae-Hee Han, Angela Chow, Dong-Chul Seo

Purpose: In recent years, there has been a rapid increase in the use of both electronic nicotine delivery systems (ENDS) and electronic devices among U.S. youth. Informed by the Diffusion of Innovations Theory (DIT), it was hypothesized that elevated use of electronic devices (EUED) prospectively would predict ENDS use among youth. It is plausible that youth who use electronic media excessively are conceptualized as innovators or early adopters in DIT and thus are more likely to experiment with electronic devices such as ENDS regardless of content. Methods: Data were drawn from the Population Assessment of Tobacco and Health (PATH) Study, a longitudinal cohort study in a nationally representative sample. Participants who were

12-17 years old, and naïve to both conventional cigarettes and ENDS at baseline ($N = 11,325$) were sampled. A total of 8,723 respondents had matched data from Wave 1 to Wave 2 and 6,051 respondents had matched data for all the three waves. Multivariable sequential logistic regressions were conducted to examine determinants of ENDS use in later waves using R version 3.5.2. Results: Among youth who were naïve to both ENDS and conventional cigarettes at baseline, those with EUED were more likely to initiate ENDS use in later years than those without EUED even after controlling for exposure to ENDS advertisements and other well-established covariates of ENDS use. Daily (adjusted odds ratio [AOR] ranges from 2.76 to 3.56) and weekly (AOR ranges from 2.16 to 2.65) social networking service (SNS) users were more likely to initiate ENDS use than non-users of SNS in the adjusted models. Such a relation was not observed in uptake of cigarette smoking. Conclusions: The findings support the hypothesis that EUED prospectively predicts ENDS use among youth. The use of DIT framework helps understand the link between EUED and ENDS use.

Board 216

The Social Determinants of Undiagnosed Diabetes in Namibia and South Africa

Shinduk Lee, David J. Washburn, Brian Colwell, Ibrahim H. Gwarzo, Debra K. Kellstedt, Petty Ahenda, Jay E. Maddock

Purpose: Worldwide, about 415 million adults have diabetes. In low-and-middle-income countries, an estimated 50-75% of

those with diabetes are undiagnosed. Despite this high percentage, limited studies have examined the social determinants of undiagnosed diabetes in these countries. This paper investigated the factors associated with undiagnosed diabetes in Namibia and South Africa. Methods: 2013 Namibia and 2016 South Africa Demographic and Health Surveys (DHS) were used for this study. These two developing countries were selected, because they collected relatively current self-reported diagnosis of diabetes and biomarker data, which enabled assessment of undiagnosed diabetes. Using Andersen's Behavioral Model of Health Service Use, potential contributing factors were categorized into predisposing factors (age, sex, education, and ethnicity), enabling factors (wealth, health insurance, and residence), and a need factor (BMI). Separate multivariable logistic regression models were used to predict undiagnosed diabetes in Namibia ($N = 242$) and South Africa ($N = 525$). Results: About 47% and 61% of respondents had undiagnosed diabetes in Namibia and South Africa, respectively. In Namibia, younger age (adjusted odds ratio (AOR) = 3.08) and being underweight or normal weight ($AOR = 2.93$) were associated with greater odds of undiagnosed diabetes, but urban residency ($AOR = 0.44$) was a protective factor. In South Africa, younger age ($AOR = 1.58$) and lower income ($AOR = 2.77$) were risk factors. Discussion: This study suggests the younger population from Namibia and South Africa are at a greater risk for undiagnosed diabetes and implies the needs for better diabetes screening among this population. Different enabling and need factors were associated with undiagnosed diabetes in these two countries, which

implies potentially different mechanisms driving the high prevalence of undiagnosed diabetes, as well as the needs for different solutions.

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E-Cigarette Device Power Moderates the Effects of Non-tobacco Flavors and Nicotine on Product Appeal in Young Adults

Adam Leventhal, Tyler Mason, Matthew Kirkpatrick, Marissa Anderson

Purpose: Identifying e-cigarette product characteristics that moderate the effects of non-tobacco flavors and nicotine on user appeal can inform regulations issued in tandem with (or in lieu of) nicotine and flavor restrictions. An e-cigarette device's electrical power affects the amount of e-cigarette solution aerosolized in each puff, leading to more concentrated or diluted aerosol, which may alter product appeal. This laboratory experiment tested whether e-cigarette device power moderated the independent and interactive effects of non-tobacco flavors and nicotine on appeal in young adults. Methods: In a within-subject design single-visit protocol, young adult e-cigarette users ($N = 100$; Mean[SD] age = 25.4[4.4] years) administered standardized doses of e-cigarette solutions varying in Flavor (fruit, menthol, tobacco) and Nicotine (nicotine-containing [6 mg/mL], nicotine-free). Each solution was administered via a variable-voltage tank-style device at low (7.3W[3.3 V@1.5 Ω resistance]) and high (12.3W[4.3 V@1.5 Ω resistance]) power settings. Participants rated each dose's appeal (0-100

scale). Results: The high (vs. low) power setting attenuated the appeal-enhancing effects of menthol (vs. tobacco) flavors (Menthol \times Power, estimate = -5.44, $p = .03$). Power did not moderate fruit's appeal-enhancing effects. High (vs. low) power amplified the appeal-reducing effects of nicotine-containing (vs. nicotine-free) solutions (Nicotine \times Power, estimate = 6.69, $p < .001$) as well as the extent to which fruit and menthol flavors suppressed nicotine's appeal-reducing effects (Flavor \times Nicotine \times Power, estimates = 9.40-14.85, $ps < .03$). Conclusions: E-cigarette device power appears to moderate flavor and nicotine effects on product appeal in nuanced ways, including enhancing the extent to which non-tobacco flavors offset nicotine's appeal-reducing effects. Regulatory restrictions on high-powered e-cigarette devices warrant consideration in efforts to protect young adult health.

Board 218

Longitudinal Association between Progression of E-cigarette Use and Smoking Cessation Behaviors among U.S. Adults

Meng Yang, Yi-Han Hu, Hsien-Chang Lin

Purpose: E-cigarette use is popular among adult smokers. The impact of e-cigarette use on smoking cessation remains controversial due to use of cross-sectional study designs or dissented frequency measures of e-cigarette use. Using e-cigarettes to quit smoking may involve a progression of e-cigarette/cigarette use, from experimenting with e-cigarettes, replacement of cigarettes, to cessation of

smoking cigarettes. This study examined the association of e-cigarette/cigarette use progression with smoking cessation behaviors among U.S. adults. Methods: This study utilized Waves 1-3 (2013-2016) adult data from the Population Assessment of Tobacco and Health Study ($N = 6,618$). Wave 1 (baseline) relative frequency of cigarette vs. e-cigarette use in past 30 days was used to measure progression of e-cigarette/cigarette use. Two weighted linear regressions and two logistic regressions were conducted to investigate the associations between progression of e-cigarette/cigarette use and four cigarette smoking outcomes at Waves 2-3 (follow-up): 1) quantity of cigarette consumption, 2) frequency of cigarette consumption, 3) cigarette quit attempt, and 4) 1-month abstinence of cigarettes, controlling for sociodemographic factors. Results: Current cigarette smokers who used e-cigarettes more frequently than combustible cigarettes at baseline had lower smoking quantity and frequency at follow-up ($\beta = 1.50$ cigarettes daily, $\beta = 3.36$ days monthly, respectively; both $ps < 0.01$), compared to e-cigarette non-users. Logistic regression results showed that current cigarette smokers who used e-cigarettes more frequently than combustible cigarettes at baseline were less likely to reach one-month abstinence at follow-up ($OR = 0.41$, $p < 0.01$) than exclusive combustible cigarette smokers. Conclusions: E-cigarettes as a smoking cessation aid may be effective in reducing smoking quantity and frequency among adults only when e-cigarette use is more frequent than combustible cigarette smoking. However, e-cigarette use may not be effective in reaching abstinence from smoking. E-cigarette use behaviors may be

one component when evaluating smoking cessation behaviors; however, recent safety and health concerns about e-cigarette use should also be considered.

Board 219

The Road to Vaping Marijuana: Marijuana Use in Mediating the Association between E-cigarette Use and Vaping Marijuana among U.S. Adults

Su-Wei Wong, David K. Lohrmann, Hsien-Chang Lin

Purpose: Recent reports from the CDC that vaping marijuana extracts (e.g., THC) could result in severe pulmonary diseases and even death have raised widespread concerns. Although studies have found e-cigarette use to be associated with vaping marijuana, the pathways that associate “e-cigarette use” and “using marijuana by e-cigarettes” remain unclear. This study examined this association and how it was mediated by marijuana use initiation. **Methods:** Adult subjects aged 18 and older who were marijuana-naïve at Wave 1 ($n = 11,330$) were extracted from the Population Assessment of Tobacco and Health survey Waves 1-3 (2013-2016). Mediation analyses using natural effect models with bootstrap variance estimation were conducted to examine the associations between marijuana-naïve e-cigarette use at Wave 1 and vaping marijuana at Wave 3 (past 3 days, past 30 days, and past 12 months), mediated by past-12-month marijuana initiation at Wave 2. **Results:** Subjects who were marijuana-naïve but used e-cigarettes at Wave 1 had higher odds of vaping marijuana in the past 3 days, past 30 days, and past 12

months at Wave 3 ($ORs = 2.73, 2.99,$ and $3.39,$ respectively, all $ps < .01$). Marijuana initiation by Wave 2 mediated these associations substantially (indirect effects to vaping marijuana: $ORs = 1.94, 2.02,$ and $2.38,$ respectively, all $ps < .05$), where 41%, 48%, and 42% of the total effects were mediated, respectively. **Conclusions:** Prior marijuana-naïve e-cigarette use was associated with higher odds of vaping marijuana later, where in-between marijuana initiation mediated these associations. Adult e-cigarette users who later initiated marijuana use were more likely to subsequently vape marijuana. Policies (e.g., marijuana laws and vaping regulations) and educational interventions (e.g., awareness campaigns) that may curb marijuana vaping and enhance the understanding of polysubstance use are needed. Future studies that investigate longitudinal effects of vaping marijuana on health outcomes, such as respiratory symptoms or pulmonary diseases, are warranted.

Board 220

Facilitators to Successful Implementation of a Tobacco-free Workplace Program in Substance Use Treatment Centers: A Comparative Qualitative Case Study

Isabel Martinez Leal, Vijay Nitturi, Bryce Kyburz, Kathy Le, Virmarie Correa-Fernandez, Daniel O'Connor, Ezmenari Obasi, Kathleen Casey

Purpose: Substance use treatment centers (SUTCs) rarely implement available evidence-based practices for treating tobacco dependence, despite high rates of tobacco use

among their clients. Taking Texas Tobacco Free (TTTF) targets this disparity by delivering an evidence-based, tobacco-free workplace (TFW) program to SUTCs across Texas. Here, we present an in-depth analysis of differences in uptake of TTTF in two SUTCs: SUTC1 ($n = 377$ annual outpatient clients) and SUTC2 ($n = 865$ annual inpatient clients) to better understand facilitators to successful implementation. Methods: Using an explanatory comparative case study design, data from focus groups and individual interviews with 40 individuals including staff, clients, program directors and counselors at both SUTCs were analyzed regarding program implementation. Cases were compared within and across each other. Results: SUTC1 fully implemented all TTTF components, with clients receiving ample cessation support, and changed organizational culture to become a 100% TFW. SUTC2 only partially implemented TTTF; clients continued to smoke on site, and requested, but never received, additional cessation support due to lack of leadership oversight and TFW program enforcement. While SUTC size and program type were distinct, the most impactful contextual differences concerned other factors. These factors associated with successful implementation included: 1) leadership commitment and hands-on oversight; 2) staff buy-in through overcoming misconceptions that quitting smoking will jeopardize substance use recovery; 3) being respectful of staff and clients through adequate communication and time to prepare and transition to become a TFW; 4) supporting clients and staff in quitting through routine individual and/or group smoking cessation counseling; and 5) establishing systematic

procedures to ensure consistent program delivery. Conclusions: Facilitators to successful implementation of a TFW program in SUTCs include: leadership involvement in implementation, staff buy-in, respectful relationships with staff and clients, and fidelity in program delivery. Study findings can guide and support other TFW programs in ensuring successful program implementation.

Board 222

Characteristics and Attitudes of College Students who Started Vaping to Quit Smoking

Kerry D. Morgan, Jessica Samuolis, Gabrielle Diaz, Kylie Elimanco, Anna E. Greer

Purpose: Little is known about young adults who start vaping in order to quit smoking combustible cigarettes. This study examined characteristics of college students who started vaping to quit smoking. Methods: We used purposive and snowball sampling to recruit 1,229 college students from a university in the northeastern US to complete a questionnaire about vaping. 829 of these students reported vaping and were included in this analysis. We asked students if they first tried vaping to quit smoking (yes/no) as well as other reasons for vaping that might be of importance to smokers trying to quit, including doesn't smell bad, acceptable in public, and healthier than cigarettes. We also asked if users vape daily (yes/no), own their vaping device (yes/no), and would support a tobacco-free campus policy which banned vaping. We analyzed the data in SPSS using

descriptive, chi square, and independent t-test statistics. Results: Among 832 students who reported ever trying vaping, 5.4% ($n = 45$) reported vaping in order to quit smoking. A greater percentage of those who started vaping to quit smoking were male (73.7%, $p < .001$), had an older average age ($M = 20.95$, $SD = 1.97$; $p < .001$), reported vaping daily (86.7%, $p < .001$), owned their own vape device (88.0%, $p < .001$), and would not support a vape-free campus policy (89.7%, $p < .001$), compared to those who started vaping for other reasons (34.7% male, mean age = 19.66, $SD = 1.32$, 38.5% vape daily, 37% own device, 80.7% support policy). Those who reported vaping in order to quit were also more likely to indicate that vaping is healthier than cigarettes ($p < .001$) and acceptable in public ($p < .001$). Conclusions: The findings provide insight for those interested in helping college students quit smoking. Students who begin vaping to quit smoking will be an important consideration for those interested in implementing and enforcing vape-free campus policies.

Board 223

Predicting Rape Myth Acceptance in Minority College Students

Jordan L. Nelon, Kyle Hendricks, Sarina Naik, Samantha Ortega, Kara Taylor, Megan S. Patterson

Purpose: The purpose of this study was to examine factors associated with rape myth acceptance (RMA) in a sample of minority college students. **Methods:** Students completed surveys at two separate universities regarding demographics,

personal experiences with violence, alcohol use, hookup behaviors, and RMA. Hierarchical linear regression analysis examined variables related to RMA across different racial and ethnic minorities. The Illinois RMA Scale was used and is based on a scale from 0-120, with a higher score indicating rejection of myths. Results: Of the 441 participants who identified as non-white, 72.1% of the sample identified as female. The mean age was 19.91 years ($SD = 2.405$) and 23.6% ($n = 104$) of the students identified as African American, 30.4% ($n = 134$) Hispanic/Latinx, 18.4% ($n = 81$) Asian or Pacific Islander, and 21.1% ($n = 182$) biracial or multiracial. For African American students, the model explained 23.2% ($p = .043$) of the variance, with being female and witnessing father abuse increasing RMA score by 10 and 18 points respectively, and witnessing their mother abuse her partner decreasing scores by 16 points. The model for Hispanic students explained 25.5% ($p = .002$) of the variance, with being female, a senior in college, and ever viewing porn related to higher scores by 12, 9, and 5 points respectively. For Asian and Pacific Islander students, the model was not statistically significant ($p = .402$). For Bi- and Multi-racial students, the model was statistically significant and explained 28.1% ($p = .021$) of the variance, with being female related to higher RMA scores by 13 points. Conclusions: Much of the literature regarding RMA among college students focuses on white students or aggregates all non-white students together. Cultural upbringing can create differing conceptualization of social movements and how the world works. Personal beliefs about rape myths, coupled with minorities experiencing sexual assault at



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higher rates than their white counterparts indicate the need to create culturally tailored educational material and interventions.

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**“Out Here The Rainbow Has Mud On It”:
Amenability of Mobile-technology-based
EMA To Assess High Risk Behaviors
among Rural MSM**

Randolph Hubach, Andrew O’Neil, Mollie Stowe, Zachary Giano, Brenda Curtis, Celia Fisher

Purpose: The purpose of this study was to assess the amenability of mobile health (mHealth) technologies such as ecological momentary assessment (EMA) among rural men who have sex with men (MSM) as a tool to collect more accurate behavioral data when investigating the relationship between rural environments, sexual behavior, and substance use. **Methods:** Forty MSM residing in rural classified counties (Index of Relative Rurality ≥ 0.50) in Oklahoma completed a one-on-one semi-structured interview. The interview guide was designed to elicit narratives from participants regarding: previous research experiences, perceived risks associated with participating in EMA-based studies, and security preferences for EMA-based studies. The transcribed interview transcripts were analyzed using a qualitative grounded theory approach to identify themes, and then open and axial coding were performed by two researchers (Cohen’s Kappa $k \geq 0.80$). **Results:** Overall, rural MSM described a willingness to participate in HIV and substance use studies that use EMA; however, they raised research-

related concerns. Three main themes emerged concerning the amenability of EMA-based studies: (1) confidentiality risks of participation, (2) methods to overcome confidentiality risks, and (3) a need for culturally responsive research. In particular, rural MSM expressed concerned about unintentional outing as a result of participation, preferred to utilize security features found in other commonly used apps, and communicated the need for researchers to not only be familiar with their rural context, but specifically LGBT-related concerns within rural communities. **Conclusion:** Study findings suggest that EMA is an acceptable research methodology for use among rural MSM in the context of HIV, sexual health information, and substance abuse when privacy and confidentiality concerns are adequately addressed. Input from community members and stakeholders is necessary to identify potential areas of concerns for participants prior to data collection.

Board 225

**Offline Social Support and Depressive
Symptoms as Factors Associated with
Online Gaming Friendships**

Tyler Prochnow, Megan S. Patterson, Logan Hartnell, M. Renée Umstattd Meyer

Purpose: Video games are becoming a part of everyday life; 65% of Americans report playing some form of video game daily. Many public health professionals are concerned with mental health side effects, citing greater risk for depressive symptoms and reduced real life social involvement.

However, many games provide features for players to extend real life relationships and make new online friendships. The purpose of this study was to use social network analysis to investigate the relationship between social connections and mental health among a network of gamers. Methods: An online gaming site, with a clear member list, was used to perform whole network analysis. Site members were asked to report demographics, depressive symptoms (PHQ-9), and social support from “in-real-life” (IRL) and online friends by online survey. Members also nominated members of the online community with whom they spoke about important life matters. Exponential random graph modeling was used to determine parameters associated with tie presence between members. Multilevel and network autocorrelation modeling were used to determine variance in PHQ-9 scores. Spatial autocorrelation was used to determine depressive symptoms and support clustering throughout the network. Results: Members ($n = 37$) were significantly more likely to speak to other members about important life matters if they reported more depressive symptoms, more online hours, and less IRL support. Multilevel models accounted for 31%-50% of the variance exhibited in PHQ-9 scores. IRL support was a significant negative factor, while number of online connections was a significant positive factor. Depressive symptoms and support were not significantly spatially autocorrelated; neither was concentrated in a certain area or clustered within the network. Conclusions: Members may be filling an IRL social support deficit with friends they have met online. Additionally, members who reported more depressive symptoms may be

seeking help from informal online connections through online gaming.

Board 226

Organizational Readiness for Tobacco-free Workplace Program Implementation Moderates Changes in Clinician’s Delivery of Smoking Interventions within Behavioral Health Treatment Clinics

Vijay Nitturi, Tzu-An Chen, Bryce Kyburz, Isabel M. Leal, Virmarie Correa-Fernandez, Daniel P. O’Connor, Teresa Williams, Lorra Garey, Tim Stacey, William T. Wilson, Cho Lam, Lorraine R. Reitzel

Purpose: Smoking rates are significantly elevated amongst individuals with behavioral health disorders, but are not commonly addressed in treatment. Providing smoking cessation interventions at behavioral health clinics helps to mitigate associated health disparities, but some organizations may not feel ready to implement this initiative. Taking Texas Tobacco Free (TTTF) is an evidence-based tobacco-free workplace program that includes clinician training to treat tobacco use. TTTF was implemented within 22 of 39 local mental health authorities (LMHAs) across Texas (hundreds of clinics; servicing > 50% of the state) from 2013-2018. This study examined organizational readiness to change as moderator of clinician intervention delivery from pre- to post- program implementation. Methods: Each LMHA leader completed the Organizational Readiness for Implementing Change pre-implementation. Clinicians ($N = 1237$) were anonymously surveyed about their consistent use of the 5As (Asking about smoking;

Advising clientele to quit; Assessing willingness to quit; Assisting them to quit; Arranging follow-up), before and after the 6-month TTTF implementation. Complete data were available for 20/22 LMHAs. The distribution of 5As were examined using chi-square tests. A generalized linear mixed model was used to account for the nested data structure of clinicians within LMHA and the binary 5As. Moderation was assessed with an interaction term. Results: Clinician delivery of each of the 5As increased from pre- to post-implementation ($p < 0.001$). Overall organizational readiness change ($p = 0.037$) and the subscales of efficacy ($p = 0.027$), commitment ($p = 0.011$), and knowledge ($p = 0.009$) were moderators of pre- to post-changes in “Asking”; knowledge was a moderator in “Assessing” ($p = 0.038$) and “Assisting” ($p = 0.001$); and resources moderated “Assisting” ($p = 0.01$). In each case, LMHAs with lower initial readiness evinced greater intervention delivery over time. Conclusion: The least ready LMHAs showed the largest gains in clinician intervention provision for smoking; thus, low initial readiness was not a barrier for program implementation, particularly when efficacy-building trainings and resources were provided.

Board 227

Evaluation of a Comprehensive Tobacco-free Workplace Program Implementation within Substance Use Treatment Centers in Texas

Tayma Machkhas, Kathy Le, Virmarie Correa-Fernandez, Bryce Kyburz, Isabel M. Leal, Tzu-An Chen, Teresa Williams, Dan P.

O'Connor, Ezemenari M. Obasi, Kathleen Casey, Lorraine R. Reitzel

Purpose: According to the CDC, evidence-based strategies to address tobacco use in substance use treatment centers (SUTCs) are inconsistently used: only 34.5% of SUTCs enforce a tobacco-free workplace, ~64% screen for tobacco use, 26.2% offer nicotine replacement therapy (NRT), and 47.4% provide cessation counseling. To tackle tobacco use disparities among SUTC clients, comprehensive, evidence-based tobacco-free workplace programs are needed. Here, we describe results from one such program called Taking Texas Tobacco Free (TTTF). Methods: TTTF partners with SUTCs and provides: 1) examples of enforceable tobacco-free workplace policies; 2) education for staff and clinicians about tobacco dependence in SUTCs; 3) training for clinicians on addressing tobacco use in treatment; 4) NRT starter kits; and 5) tailored passive dissemination materials. TTTF utilizes mixed methods (surveys, focus groups, in-person consultation) during a 6-month implementation period, and evaluates gains via a pre- and post-education test and pre- and post-implementation survey comparisons. Results: TTTF enrolled 9 SUTCs that collectively serve 83,100 unique Texans annually; 2 dropped out. The remaining 7 adopted a 100% tobacco-free workplace policy. Training attendees ($N = 293$) demonstrated a 38.2% increase in knowledge following education ($p < .001$). The 3 SUTCs that are post-implementation demonstrated increases in clinicians advising quit attempts ($p = .046$) and arranging follow-ups with clients ($p = .015$). Overall, 2,684 unique clients have been screened for tobacco use, and 464 clients and 41 staff have



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received NRT, indicative of quit attempts. Conclusions: TTTF is an effective evidence-based tobacco-free workplace program that has assisted SUTCs in implementing tobacco-free workplace policies, facilitating smoking quit attempts by training providers in tobacco cessation interventions and integrating those interventions into regular clinical practice. This presentation describes the program, participating SUTCs, data-based strategies used to tailor implementation within each setting, accomplishments to date, and lessons learned regarding drop-outs that can guide program dissemination in other settings and states.

Board 228

Exploring Early Adolescents' Perspectives Related to Community and Community Participation.

Yumary Ruiz, Carlyn M. Kimiecik, Kelsey So, Lindley McDavid, Meghan H. McDonough, Frank J. Snyder

Purpose: Community participation can play an instrumental role in positive youth development by offering adolescents opportunities to build life-skills, develop self-confidence, create prosocial relationships, and avoid negative risk health behaviors. While focused efforts have increased adolescents' involvement in community participation, a need exists to develop opportunities for early adolescents to become involved in community action. This qualitative study sought to explore early adolescents' understanding of community, community participation, and community challenges faced by themselves or others.

Youth were also asked to share ideas to address community challenges and to discuss barriers to engage in community efforts. Methods: Youth ages 11-13 ($N = 39$, $M_{age} = 12.1$, $SD = 1.12$, 51.2% male) from low-income families who attended a summer sports camp participated in semi-structured interviews (20-40 minutes) that were thematically analyzed. Results: Participants described community as a place where groups of people are socially connected (e.g., family, friends, neighbors) and where they feel welcomed, included, and accepted. Additionally, kindness and caring for others were identified as community attributes. Early adolescents described crime, substance use, peer conflict, and school stressors as pressing issues faced by youth in their community. Participants offered ideas to address these challenges including being kind and helping others, working together with others on community problems, fundraising, and advocating to school boards and local and national politicians. Youth also spoke of feeling devalued, feeling dismissed by adults, and not having opportunities to engage in change efforts as barriers that can hinder early adolescents from engaging in community participation. Conclusions: Findings suggest that early adolescents are both aware of and interested in participating in community change efforts, thus providing support for developing community participation opportunities that involve early adolescents. These findings can inform development of evidence-based strategies that focus on positive youth development through community participation and civic engagement.

Board 229

Use of Mental Health Strata in Explaining Tobacco Use Initiation among U.S. Adolescents: A Novel Multilevel Approach

D-H Han, E-H Lee

Purpose: Mental health problems are well-documented antecedents to substance use including tobacco use. However, given the multidimensionality of mental health, different domains of mental health conditions show different associations with tobacco use behavior. Accordingly, our understanding about the association tends to be piecemeal and sometimes even confusing. Methods: After constructing a total of 218 mental health strata using all possible combinations of eight core mental health conditions, we examined a prospective association between the mental health strata and use initiation of four different tobacco products (i.e., e-cigarettes, conventional cigarettes, cigar/pipe, and hookah) a year later among tobacco-naïve youth at baseline ($N = 8,694$) of the Population Assessment of Tobacco and Health (PATH) study, a nationally representative longitudinal survey. With the conceptualization of multilevel structure where individuals are nested within the mental health strata, we fitted a series of hierarchical models and evaluated individual heterogeneity and discriminatory accuracy using such metrics as variance partition coefficient (VPC) and proportional change in variance (PVC). Results: The mental health strata showed the highest discriminatory accuracy of the categorization (VPC: 10%) for cigar/pipe, followed by conventional cigarettes (9%), and e-cigarettes and hookah (2% each). Although e-cigarettes showed the highest initiation rate (i.e., 7.6%) among the

four tobacco products, the discriminatory accuracy of the mental health strata was the lowest among the four tobacco products. Conversely, cigar/pipe showed the lowest initiation rate (i.e., 2.9%) but the highest discriminatory accuracy. Conclusions: The finding indicates that mental health conditions have more discriminatory predictability for cigar/pipe use initiation, but less for e-cigarette use initiation among tobacco-naïve youth. It also shows viability of the novel method of using mental health strata in predicting tobacco use behavior, which may be applied to other substance use.

Board 230

Characterizing Unintentional Daytime Sleep by Heaviness of Tobacco Use among Homeless Adult Smokers

Matthew Taing, Valentina Maza, Michael Businelle, Darla Kendzor, Lorraine Reitzel

Purpose: Nicotine is a physiological stimulant that increases blood pressure, heart rate, and respiration. These effects may counteract expected daytime sleepiness associated with sleep inadequacy. Homeless adults have more sleep inadequacies (e.g., 16.4 vs. 10 days of inadequate sleep in last month) and a higher prevalence of smoking (> 70% vs. 14%) than domiciled adults. This study seeks to characterize the relationship between heaviness of tobacco use (as reported by cigarettes per day [CPD]) and days with unintentional daytime sleep, with the hypothesis that heavier cigarette use and unintentional daytime sleep are inversely related. Methods: Participants were ($N = 184$; 71.7% men) homeless adult smokers

recruited from a shelter in Dallas, TX, who self-reported personal characteristics, average CPD (light smoking: < 10 CPD vs. moderate/heavy smoking: > 10 CPD), and unintentional daytime sleep (0 vs. > 1 days over the preceding month). Logistic regression was used to assess the association between CPD and unintentional daytime sleep controlling for age, sex, lifetime months homeless, physical activity, and depressive symptoms. Results: Overall, 43.5% of the sample were moderate/heavy smokers; 72.2% of the sample reported > 1 day of unintentional daytime sleep over the last month. About 64% of moderate/heavy smokers reported > 1 day of unintentional daytime sleep versus 77% of light smokers. Results indicated that moderate/heavy smoking was associated with reduced odds of unintentional daytime sleep ($AOR = .465$; $CI_{95} = .225-.963$). Conclusions: Findings suggest that heavier smokers experience less unintentional daytime sleep, possibly due to increased nicotine exposure. Clinicians who assist homeless smokers with smoking quit attempts may consider co-implementation of sleep hygiene interventions as nicotine consumption decreases. Pharmacological approaches to extend sleep duration may also supplement behavioral advice. These results prompt further investigation regarding the biological mechanism underlying nicotine's effects on sleep and how reductions in CPD among heavier smokers may affect unintentional daytime sleep.

Board 231

Creating Continuity in Care by Engaging Associated Community Agencies as Part of the Implementation of a Comprehensive

Tobacco Free Workplace Program in Substance Use Treatment Clinics in Texas

Ashley Taylor, Bryce Kyburz, Isabel M. Leal, Kathy Le, Tzu-An Chen, Virmarie Correa-Fernandez, Teresa Williams, Daniel P. O'Connor, Ezemenari M. Obasi, Kathleen Casey, & Lorraine R. Reitzel

Purpose: Taking Texas Tobacco Free (TTTF) is an evidence-based, multi-component tobacco control program being implemented within substance use treatment centers across Texas to address the problem of elevated tobacco use rates and premature tobacco-related morbidity and mortality. In 2018, TTTF expanded to implement an adapted program within community agencies that are associated with our enrolled substance use treatment centers. Here, we describe how TTTF was adapted for these community agencies and present up-to-date results from the ongoing implementation of this component of the TTTF program. Methods: The community agency implementation of TTTF entails the provision of: 1) education to all client-facing staff about tobacco use and cessation within the associated demographic; 2) specialized training (e.g., Certified Tobacco Treatment Specialist training, Motivational Interviewing); 3) tailored passive dissemination materials; and 4) tobacco-free workplace policy development and/or nicotine replacement therapy (as agreed). Pre- and post-training and implementation data were collected. An independent t-test assessed percent change in knowledge gained; changes in pre- to post-implementation data were assessed using chi-square tests. Results: TTTF enrolled 7 community agencies, spanning 5 metropolitan cities, which serve ~23,500

unique individuals annually. Thus far, TTTF has educated 84 community agency professionals with a 52% increase in knowledge ($p < .001$). TTTF has sent 127 professionals to specialized trainings. Following program implementation, data for 3 community agencies showed increases in clinical providers asking about tobacco use, assisting with a quit plan, and arranging follow-ups ($ps < .001$). Recruitment and program evaluation for community agencies is ongoing. Conclusions: TTTF has successfully expanded to community agencies to create better continuity of care for tobacco dependence among substance use treatment patients and other vulnerable groups in Texas. Thus, this provides an example of how evidence-based tobacco control program implementation can be adapted for community agencies to help both patients and staff in efforts to become tobacco free.

Board 232

Individual and Place-based Factors Related to Forgone Hospital Care Due to Cost in China

Samuel Towne, Xioajun Liu, Rui Li, Matthew Smith, Jay Maddock, Anran Tan, Samah Hayek, Shira Zelber-Sagi, Xiaoqing Jiang, Zhaokang Yuan

Purpose: Forgoing needed medical care because one cannot afford it can lead to delays in preventive and other types of care that may increase the likelihood of potentially preventable complications or even delay disease diagnosis. This burden may be especially high for residents of low-

to-middle income countries, like China, where economic resources are significantly limited. Thus, we sought to identify factors associated with forgone hospital care among residents of multiple provinces in China. Methods: Data were collected via survey in multiple provinces across China, with the highest concentration in Hubei and Jiangxi. Surveys asked individuals ($n = 578$) if there was a time when they did not seek medical care at a hospital at least once in the past 12 months due to cost. Logistic regression was used to assess the binary variable, forgone medical care. Results: Overall, 93% were insured, 94% reported not having a primary care physician, 77% resided in urban areas, 52% were female, and 66% had some college or higher. While most (71%) respondents did not report forgone medical care due to cost, nearly one in three did. In adjusted logistic regression analyses, items associated with ($p < .05$) forgone care included lacking a high school education, being dissatisfied with ones' commute to the hospital, and residing in an area with a lower relative physician density. Conclusions: In China, patients seek care at hospitals for reasons spanning primary care and more serious issues and thereby largely ignore smaller clinics. Thus, identifying those most at risk of forgone hospital care provides insight into the broad importance for policy makers and other key stakeholders. The relationship between forgone hospital care and lower education, dissatisfaction with the commute to the hospital, and lower relative physician density is an important set of findings as it highlights both individual-level and contextual factors that can inform public policy interventions.

Board 233

Self-identified Pro-life and Pro-choice Definitions among a National Sample of U.S. Adults: Using Topic Modeling & Sentiment Analysis to Uncover Latent Language Perceptions

Danny Valdez, Kristen Jozkowski, Brandon Crawford, Ronna Turner, Wen-Jo Lo

Purpose: Abortion ideologies are often dichotomized into pro-life and pro-choice monikers. Most people are familiar with these terms and understand them to describe varying degree of support of or opposition to abortion. However, people's attitudes toward abortion are complex and generally cannot be captured under a strict 'support or oppose' framework. Thus, the actual meanings people ascribe to these dichotomous terms may, too, be complex and nuanced, warranting insight into how individuals uniquely understand the scope of the terms 'pro-choice' and 'pro-life' through self-definition. The purpose of this study is to analyze and map latent language themes of written definitions of "pro-life" and "pro-choice." **Methods:** We collected open-ended data from a national sample ($N = 2897$) of English and Spanish speaking U.S. adults. We asked participants how they define pro-life and pro-choice in their own terms. We analyzed the text data through topic modeling and sentiment analysis algorithms to: (a) identify latent language themes for both terms—pro-life and pro-choice, and (b) determine the overall objectivity of the definitions provided. **Results:** Most latent themes aligned with traditional perceptions of pro-life and pro-choice—(e.g., baby, save, life, live for pro-life and right, choose, terminate, end for pro-choice). Both groups, however, had evidence

of nuance that characterized pro-life and pro-choice uniquely and subjectively—(e.g., motherhood, mental health, justice). **Conclusions:** Though pro-life and pro-choice monikers are dichotomous, actual meaning ascribed to them is more complex. Such nuance in definitions supports previous research indicating that attitudes toward abortion are more complex than dichotomous terms allow for. We advocate for moving away from such monikers in favor of other more informative terms that may be more encompassing of true abortion sentiment.

Board 234

Civic Engagement and Youth Development: A Two-year Evaluation of the Next Generation Community Leaders Initiative in New Jersey

Wenhua Lu, Stephen Danley, Mary Mitsdarffer, Samantha White, Anetha Perry, Lili Razi, Curtis Williams, Rashmi Kumari, Peggy Jean Craig, Matthew McCaffrey

Purpose: Civic engagement programs empower youths to develop their capacity to become agents of positive change in their communities. With an aim to improve the culture of health in New Jersey, the Next Generation Community Leaders (NGCL) initiative funded 11 underserved communities to develop teams of youth leaders to design and implement community summer health projects. This study provides a two-year evaluation of the NGCL initiative in improving positive youth development. **Methods:** Adult coaches from 11 NGOs and community health organization across New Jersey recruited youths from their respective

communities. At baseline and post-programming, youths were assessed on their civic engagement attitudes and behaviors, health literacy, and community health knowledge. Throughout the year-long programming, youths were further surveyed about their perceived impact of the initiative on improving different aspects of their personal development at three different time points. Data for youths who participated in the 2017 and 2018 NGCL initiative were pooled and analyzed. Matched pair t-test and growth curve modeling were used for data analysis. Results: Altogether 214 youths participated in the NGCL initiative. Most youths (69%) aged 16 to 18 and over 70% were Hispanic or black. At post-programming, significant increase in youths' community health knowledge ($p < 0.05$) was observed. Throughout the programming, longitudinal increase in youths' cognitive skills ($p < 0.001$), social skills ($p < 0.05$), leadership skills ($p < 0.001$), and identify exploration ($p < 0.05$) were noted. Youths developed and implemented a total of 24 community health projects, including 10 infrastructure improvement projects, 7 summer feeding projects, and 7 health education/promotion projects. Conclusions: Evaluation revealed positive impact of the NGCL initiative in improving youths' personal development. Public health practitioners can use civic engagement as a promising approach to both encouraging youths to become leaders in their communities and having youths impact the health of their communities.

Board 235

Vaping: Predictors of Actual and Perceived Use Behavior among U.S. College Students

Anas K. Nabil, Robert L. Ohsfeldt, Adam E. Barry

Purpose: Vaping – the use of electronic cigarettes - is an emerging health problem among college students, with past 30-day vaping nicotine and vaping marijuana increasing from 6.1% to 15.5% and 5.2% to 10.9%, respectively, between 2017 and 2018. This research sought to identify risk factors associated with actual, and perceived, use, of e-cigarettes among college students participating in the National College Health Assessment (NCHA). Methods: Respondents ($n = 19,861$) comprised undergraduate and graduate college students across more than 40 distinct public and private institutions. Past month frequency of use was established for alcohol, tobacco, marijuana, and e-cigarettes (ATME). Additionally, perceived use of ATME by the 'typical student' at each institution was assessed. Descriptive statistics established current users (vaped within past 30 days) and non-users (never used, and previously vaped but not in the past 30 days). Multivariate logistic regression assessed (1) whether alcohol, tobacco, or marijuana use were associated with use of e-cigarettes; and (2) whether perceived use of alcohol, tobacco, or marijuana by typical students were associated with perceived use of e-cigarettes, above and beyond the influence of several covariates (e.g., age, gender, race). Results: Approximately 4.86% were classified as current e-cigarette users. More than 7 out of every 10 respondents, however, thought the 'typical student' on



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their campus was an e-cigarette user. Male students ($OR = 2.28, p < 0.01$) were at a higher risk of vaping compared to females. Exposure-response relationships among cigarette, alcohol, and marijuana users were present, such that likelihood of current vaping increased significantly as substance use increased. Similarly, as perceptions of typical student substance use increased, respondents were far more likely to contend the typical student used e-cigarettes. Conclusions: Given students perceived the typical student vaped, it would be important for future work to assess the relationship between vaping behaviors and perceptions.

Board 236

Combustible and Electronic Cigarette Use and Insufficient Sleep among U.S. High School Students

Ashley Merianos, Roman Jandarov, Kelvin Choi, Kayleigh Fiser, E. Mahabee-Gittens

Purpose: Current tobacco product use and insufficient sleep are prevalent problems facing U.S. adolescents. Limited research has assessed the association between current use of e-cigarettes and cigarettes and sleep health. The objective was to investigate the relationship between use of e-cigarettes only, cigarettes only, and dual use of both products, and insufficient sleep among U.S. high school students. Methods: We conducted a secondary data analysis of the 2017 Youth Risk Behavior Survey including 11,296 U.S. high school students. We used the following categories to classify students based on their current use: 1) no use; 2) e-cigarette use only; 3) cigarette use only; and 4) dual use of e-

cigarettes and cigarettes. We built a logistic regression model that adjusted for demographics (sex, grade level, and race/ethnicity) and potential confounders (television watching, computer use, mental health problem, and alcohol use). Results: Overall, 73.4% of students reported insufficient sleep of < 8 hours/day on average, with high rates of insufficient sleep reported among those who used e-cigarettes only (78.8%), used cigarettes only (72.6%), and engaged in dual use (86.7%). Adjusted results indicated students who were current e-cigarette only users were 1.60 times more likely (95%CI = 1.05-2.46) to report insufficient sleep compared to students who did not currently use e-cigarettes and/or cigarettes. Students who currently used cigarettes only were significantly less likely to report insufficient sleep (adjusted odds ratio = 0.51, 95%CI = 0.30-0.86), while adjusting for demographics and the confounders. No differences were found between current dual product use and insufficient sleep. Conclusions: We report that current use of e-cigarettes increased the odds of insufficient sleep, but current use of cigarettes decreased the odds. Prevention efforts are critically needed to simultaneously reduce the overall rise in current tobacco use trends due to the surge in e-cigarette use and increase sleep health among this vulnerable population.

Board 237

**If You Build it, Will They Come?
Exploring ‘Reach’ and ‘Adoption’ within
a Three-year Implementation Evaluation
of School-based Health Centers in
Greenville, South Carolina**



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Laura J. Rolke, Sarah F. Griffin, Jacqueline E. Forrester, Melinda Lavalley-Turner, Loretta Crowley, Holly E. Bryan, Lucia Wilkes, Tracy Waters

Purpose: The school-based health center (SBHC) care model brings more comprehensive health services to schools to address mental, physical, and behavioral health issues impacting student success. There are over 2,300 SBHCs in the United States with diverse care and staffing models and varying implementation success. In 2015, Prisma Health (then Greenville Health System) began a nurse practitioner SBHC care model in four Title I middle schools in Greenville, South Carolina. The implementation assessment of these SBHCs was guided by the RE-AIM framework using a mixed methods approach. The health service promotion and messaging efforts by the SBHC team were measured through the “Reach” and “Adoption” components. Reach is measured by the number of returned consent-to-treat forms that allows students to be seen by the SBHC. Adoption is assessed through adult gatekeeper awareness; educator awareness of the services and student referrals were assessed through an annual survey and parental awareness through 87 intercept interviews at school events. Of the approximately 2,000 students attending the four schools, returned consent-to-treat paperwork increased from 6% of the student population to 52% over the three-year period. Educator awareness of specific SBHC services increased the most for over-the-counter medication availability (210% increase) and provision of prescription medication (171% increase). Parent interviews suggest parents support the SBHC, but have difficulty describing many

of the services provided. Throughout the implementation process, data-driven decisions have been made to promote the SBHCs and increase student, parent, and educator awareness of services provided.

Board 238

The Effect of Gender on Substance Use, Mental Health, and Treatment Involvement in a Reentry Population

Kevin Kissell, Nicole Kinzeler, Ray Gaddis, Tracy Atkinson, Jo Ann Ford

Purpose: Individuals involved in the criminal justice system have rates of substance use and dependence that are more than four times higher than the general population, and many return to their communities with untreated substance use disorders (SUD). In the general population, only 8% of individuals with an SUD receive treatment, with women more likely to engage compared to men; however, there have been limited studies examining gender differences in treatment outcomes for a reentry population. The Montgomery County Offender Reentry Program (MCORP) was developed to provide case management and access to SUD treatment for individuals reentering their communities. The intent of MCORP was to reduce recidivism and improve behavioral health outcomes. **Methods:** Upon release from the Monday Community Correctional Institution, participants were referred to SUD treatment and provided comprehensive case management. Outcome measures including substance use, depression, satisfaction with life, and treatment involvement were obtained from self-reported data at baseline



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and six-month follow-up. Paired samples *t*-tests and repeated measures ANOVA were used to measure change in outcome measures and compare gender differences. Results: At baseline, 92% of participants reported substance use with more males using alcohol, marijuana, cocaine/crack, and benzodiazepines compared to females. Comparatively, heroin and methamphetamine use was higher in females. Females were more likely to engage in and complete treatment as well as stay in treatment longer compared to males. Repeated measures ANOVAs revealed statistically significant differences between the genders for SUD outcomes but no significant differences regarding depression levels and overall satisfaction with life. Conclusions: Both men and women who participated in the MCORP program engaged in treatment services and demonstrated reductions in substance use and improved mental health. Women, however, were more likely to successfully complete treatment and stayed in treatment longer resulting in better illegal drug use and mental health outcomes when compared to men.

Board 239

Community College Students' Food Insecurity and Mental Health Status After Participating in the Food Scholarship Program

Karen Mejia, Nadia Garcia, Sajeevika Daundasekara, Daphne Hernandez

Purpose: Hunger and mental health issues are prevalent in higher education. The Food Scholarship Program (FSP) is an approach to

reducing food insecurity by providing food directly to college students through on-campus food distributions. The FSP could potentially improve students' mental health status while simultaneously reducing food insecurity. The purpose of this analysis was to examine how FSP participation influences food insecurity, depression, and anxiety among community college students. Methods: The FSP consisted of 16 on-campus food distributions over an eight-month period. Based on eligibility criteria described elsewhere, 1,000 students were offered the FSP. Online questionnaires at baseline and at the end of the intervention (i.e., 8 months later) gathered students' food insecurity (18-item USDA Food Security Scale) and mental health status (depression: Patient Health Questionnaire-9; anxiety: General Anxiety Disorder-7). Controlling for baseline differences, ANCOVAs identified differences in food insecurity, depression, and anxiety based on the two time points: 1) between students who redeemed vs. never redeemed their scholarship, and 2) between students who frequently attended the distribution (i.e., ≥ 3 distributions; high attendees) vs. those that attended infrequently (i.e., 1-2 distributions; low attendees). Results: The analytic sample consisted of students who completed both baseline and final survey ($n = 385$): 71% female, 84% single, 57% black, and 45% ≥ 30 years of age. Forty-six percent of students ($n = 179$) redeemed their scholarship by attending the distribution (i.e., 79 high attendees; 100 low attendees) and 54% ($n = 206$) never redeemed. Food insecurity scores at the end of the intervention continued to be significantly higher among students who redeemed their scholarship compared to



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those who never redeemed ($F = 28.44$, $p < 0.001$). Over time, depression ($F = 5.17$, $p = 0.025$) and anxiety scores ($F = 5.08$, $p = 0.026$) continued to be significantly lower among high attendees compared to low attendees. Conclusions: Poor mental health is maintained at a low level during frequent FSP participation; food insecurity remains high during FSP participation.

Board 240

The Impact of a Randomized Control Trial of a Food Assistance Program Designed for Community College Students

Sajeevika Daundasekara , Nadia Garcia, Karen Mejia, Daphne Hernandez

Purpose: Campus-based food pantries have shown limited success in reducing food insecurity among students. A different approach is to provide food scholarships (FS). FS provide food directly to students through on-campus food distributions set up similar to a farmers' market. The purpose of the present analysis was to evaluate the effects of an eight-month FS intervention on food insecurity, depression, and anxiety among community college students. Methods: Among the eligible participants (described elsewhere), 2,000 community college students were randomized to either the food scholarship ($n = 1,000$) or control ($n = 1,000$) group. FS participants could visit the distribution twice a month and take up to 60 pounds of food per visit. Students in both groups were given an online survey prior to and at the end of the intervention measuring food insecurity (18-item USDA Food Security Scale) and mental health

(depression: PHQ-9; anxiety: GAD-7). Two sample t-tests and chi-square tests were used to compare the baseline characteristics between treatment and control groups. Logistic regression models controlling for baseline differences and baseline food security/depression/anxiety were used to evaluate the treatment effect on food security, depression and anxiety. ANCOVAs were used to compare the between-group changes on each outcome over time. Results: 329 students received the treatment. Of those students, 179 completed the surveys. Among the control group, 389 students completed the surveys. Overall, students were 28.86 ($SD = 10.65$) years of age, majority female (74.3%), and black (56.0%). At the end of the intervention the likelihood of food insecurity was significantly higher among treatment group compared to control group ($OR = 1.90$, $p = 0.002$); depression ($OR = 1.06$, $p = 0.855$) and anxiety rates ($OR = 0.60$, $p = 0.260$) did not differ between groups. However, over time the treatment group had a significantly higher reduction in depression ($F = 6.34$, $p = 0.012$) and anxiety symptoms ($F = 13.30$, $p < 0.001$) compared to the control group. Conclusions: FS positively impacted mental health but lacked impact on food insecurity status.

Board 242

Mapping Tobacco Retailer Disparities

Ritika Bhawal, Lorenzo Higley, Dana Stevens

Purpose: Reducing smoking prevalence among adults is a national health objective. Low-income adults have triple the smoking

rates of their higher-income counterparts. Tobacco industry marketing is prevalent in lower-income neighborhoods. Previous study results suggest there may be a relationship between tobacco retailers and neighborhood characteristics (e.g., median income). Methods: Local tobacco retailer location data were combined with American Community Survey data. Spatial analyses (e.g., buffers) were completed using ArcGIS Online (ESRI, Redlands, CA, USA). Results: Visual and spatial analyses within census tracts and jurisdiction boundaries revealed disparities associated with tobacco retailers. Most tobacco retailers ($n = 53$, 87%) were in census tracts where racial/ethnic minorities have the lowest median income. Hispanic/Latinos had the lowest median income in the census tract with the highest proportion ($n = 15$, 25%) of tobacco retailers. Conclusions: Spatial analyses and mapping provide an opportunity to visually represent disparities that can contribute to health inequities. Stakeholders interested in advocating for tobacco prevention policy can use maps to improve both message relevance and reach.

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Aerosol, Vapor, or Chemicals? College Students' Perceived Harmfulness of Electronic Cigarette Emissions

Matthew Rossheim, Cavazos Tammy, Eric Soule, Xiaoquan Zhao, Asra Ahmad, Sumihiro Suzuki, Tracey Barnett, Ogechi Emechebe

Purpose: Message framing can often impact risk perception, individual behavior, and

public policy. The tobacco industry has used message framing to reduce perceptions of harm from tobacco use, such as labeling secondhand smoke “environmental tobacco smoke.” Similarly, e-cigarette emissions are often referred to as “vapor,” which some people seem to associate with water vapor. “Aerosol” (i.e., solid and liquid particles suspended in gas) and “chemicals” (the composition of this aerosol) are more accurate terminology that may differentially communicate risk associated with exposure. The current study is the first to examine the influence of wording for e-cigarette emissions on perceived harm of secondhand exposure, and whether harm perception was associated with support for a tobacco-free campus policy. Methods: 52 sections of a college English course ($n = 791$ students) were cluster randomized to 1 of 3 survey conditions, which asked about perceptions of harmfulness related to secondhand exposure to e-cigarette: “vapor,” “aerosol,” or “chemicals.” Regression analyses were used to examine the association between e-cigarette emission terminology conditions and perceived harm, as well as whether perceived harm of secondhand exposure was associated with support for a tobacco-free policy, adjusting for other factors. Results: Compared to the “vapor” condition, “chemicals” and “aerosol” conditions were associated with increased odds of perceiving secondhand exposure to e-cigarettes to be “harmful” or “very harmful” compared to “not at all harmful” or “slightly harmful” ($RR = 2.0$, $p < 0.01$ for both). Greater perceived harm of secondhand e-cigarette exposure was associated with increased odds of supporting a tobacco-free campus policy ($OR = 2.22$, $p < 0.001$). Discussion: Terms

used to describe e-cigarette emissions appear to influence perceptions of harmfulness, which was associated with support for a tobacco-free campus policy. Health communication campaigns should use accurate terminology to describe e-cigarette emissions, rather than vernacular that likely conveys lower risk.

Board 244

Effect of T21 Policies on E-Cigarette Use among Military Personnel

Justin McDaniel, S. Patrick

Purpose: Some states have raised the minimum legal age for sale of tobacco products from 18 to 21 (“T21” policies), although some of these states, such as California, have military personnel exemptions. The purpose of this study was to determine whether the relationship between living in a T21 state and e-cigarette use was moderated by military service status among individuals aged 18 to 20 years. **Methods:** Data for this study were obtained from the 2016-2018 Behavioral Risk Factor Surveillance System (BRFSS) and from state-level legal documents pertaining to T21 policies. Because we excluded respondents who, at the time of the survey, were living in a state that had local but not state-level T21 policies, our final analytic sample of individuals aged 18 to 20 years was 11,926, of which 801 reported military service. Current use of e-cigarettes (no = 0, yes = 1) served as the dependent variable. Using a multilevel survey-weighted generalized linear mixed model (GLMM), we evaluated the moderating effect of military service on

the relationship between T21 state of residence and e-cigarette use with an interaction term. In this model, we also controlled for sex, race, age, annual income, mental distress, binge drinking, and combustible cigarette use. State of residence was included as a random effect. Results: E-cigarette use was lower among military personnel in T21 states (6.45%) than military personnel in non-T21 states (16.10%, Cohen’s $h = 0.31$); however, these differences were trivial among civilians (non-T21 state = 13.99% vs. T21 state = 13.93%, Cohen’s $h < 0.01$). Results of the GLMM showed that the adjusted interaction term for moderation was significantly different from zero ($AOR = 0.24$, $95\%CI = 0.13 - 0.44$). **Conclusions:** Abolishing military exemptions to state-level T21 policies may be associated with lower e-cigarette use rates among military personnel.

Board 245

Examining the Moderating Effect of Anxiety Sensitivity on Past-month Pain and Heaviness of Smoking among Adult Homeless Smokers

Sean Reuven, Tzu-An Chen, Michael Zvolensky, Michael Businelle, Darla Kendzor, Lorraine Reitzel

Purpose: Pain and cigarette smoking are reciprocally related. Prior research indicates that smokers with high levels of anxiety sensitivity (AS)—the fear of behaviors or sensations associated with the experience of anxiety—tend to smoke more cigarettes per day and score higher on measures of tobacco dependence. AS has also been positively

associated with the severity of pain. However, past research has been conducted with domiciled smokers. Here, we examine the potentially moderating role of AS in the association between past-month pain (PMP) and heaviness of smoking (HS) among homeless smokers, an exceedingly vulnerable and marginalized group with very high smoking rates. Methods: Participants ($N = 461$; 64.9% men, $M_{age} = 43.1 \pm 11.8$) were smokers recruited from 6 homeless serving agencies in Oklahoma City, OK. Participants self-reported the presence and severity of PMP (“How much bodily pain have you had during the past four weeks?”), HS was measured via the heaviness of smoking index (HSI), and AS was measured via the Anxiety Sensitivity Index-3 (ASI-3) and its 3 subscales: physical, cognitive, and social concerns. Linear regressions were used to examine the significance of the ASI moderation controlling for age, sex, race/ethnicity, education, health insurance, perceived stress, and depression. Plots of associations for $M \pm SD$ derived low, moderate, and high “levels” of AS were generated thereafter. Results: ASI-3 total, cognitive, and physical concerns each significantly moderated associations of PMP and HSI ($ps < .05$), whereas social concerns did not. Individuals with high AS had greater HS as PMP values increased; individuals with low AS had lower HS as PMP values increased. Conclusion: Not dissimilar from work with domiciled smokers, our results suggest that homeless smokers with high AS may benefit from AS-based interventions to reduce the association between PMP and HS, which may present in-roads to facilitating smoking cessation among this vulnerable group.

Board 337

Development and Validation of an Alcohol-related Academic Consequences Measure

Rose Marie Ward, Shannon Speed, Ying Guo, Emily Laska

Purpose: Students admit that their drinking habits interfere with their academic performance. Approximately 1 in 4 college students report academic consequences, including missing class, underperforming on exams or papers, and receiving overall lower grades, as a result of alcohol consumption. The purpose of the current study was to develop a valid measure of alcohol-related academic consequences. Methods: Undergraduates students ($n = 396$) were recruited for a multiple health behavior study. Participants were predominantly Caucasian and middle class; average age of participants was 20.38 ($SD = 2.61$). Results: The researchers wrote items for the scale based on focus groups, a review of the literature, and a review of general alcohol-related consequence measures. Six academic areas were hypothesized to be impacted: effects in and outside the classroom, relationships with people in class and professors, emotions, and academic career. The researchers used an iterative measurement development process. The exploratory factor analysis yielded a four factor structure – Classroom Effects, Academic Shortcuts, Missed Class, and Classroom Attention (explaining 60.25% of the variance). The subscales had excellent internal consistency ($> .80$) and positively correlated with quantity and frequency measures of alcohol consumption ($r > .12$). In addition, all of the subscales positively related to alcohol consequence measures (rs



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.21-.69). However, only the Classroom Effects scale inversely related to GPA with students reporting higher levels of classroom consequences having lower GPAs. Conclusions: The Classroom Effects subscale assesses consequences such as being unprepared for class. The Academic Shortcuts subscale addresses cheating and plagiarizing. The Missed Class subscale measures skipping or coming late to class.

The Classroom Attention subscale assesses when students don't pay attention or get distracted by social media during class. The Alcohol-related Academic Consequence scale provides a measure of the various ways that alcohol consumption impacts college students' academic experience. Intervention efforts might use these consequences to help decrease problematic alcohol consumption levels.

Board 301

Exposure to Violence and Sleep Inadequacies among Men and Women Living in a Shelter Setting

Pooja Agrawal, Julie Neisler, Michael Businelle, Darla Kendzor, Daphne Hernandez, Chisom Odoh, Lorraine Reitzel

Purpose: Exposure to violence may explain sleep inadequacies reported by homeless adults, with women being potentially more susceptible to violence and sleep disturbances than men. This study examined the association between violence and sleep inadequacies among homeless adults and explored differences by sex. Methods: Adult participants were recruited from a shelter ($N = 194$; 71.1% men, $M_{age} = 43.8 \pm 12.2$). Participants self-reported victimization and/or witnessing violence (mugging, fight, and/or sexual assault) at the shelter, sleep duration (over an average 24 hours), insufficient sleep (days without sufficient rest/sleep), and unintentional daytime sleep (days with unintentional sleep) in the past month. Linear regressions were used to estimate associations between violence and sleep inadequacies, controlling for sex, age, race, months homeless, and depression. Moderation by sex was examined via an interaction term following mean-centering of variables. Results: Overall, 20.6% of participants ($n = 40$) reported victimization since moving to the shelter. In the last month, participants reported witnessing an average of 2.9 ± 5.1 acts of violence. Over the same timeframe, participants reported 6.9 ± 2.0 hours of sleep nightly, 11.2 ± 10.7 days of insufficient sleep, and 6.2 ± 8.8 days with unintentional daytime sleep. In adjusted analyses, witnessing violence was associated

with insufficient sleep ($p = .001$). Men and women differed only in age and race in unadjusted analyses; sex was not a significant moderator of any association between violence and sleep in adjusted analyses. Conclusions: Links between witnessing violence and sleep inadequacies should be considered in shelter health promotion efforts. Successful efforts to minimize violence may reduce insufficient sleep amongst both sexes.

Board 302

Sexual Violence Victimization across Three University Campuses: An Exploratory Study

Sydney Brown, Megan S. Patterson, Mandy Spadine, Jordan Nelon, Shana Walsh, Beth Lanning

Purpose: The purpose of this study was to investigate sexual violence rates across multiple campuses, assess which subgroups of the population are at the greatest risk, and identify the most salient risk factors to experiencing sexual violence. Methods: 2,137 full-time undergraduate and graduate students from three universities (855 from a large private university in the south; 633 from a large public university in the Midwest; and 749 from a large public university in the south) completed an anonymous online survey. Survey items assessed background/demographic information, alcohol use, hooking up experiences, and history of sexual violence. Logistic regression analyses were conducted in SPSS to examine relationships between sexual violence, behaviors, and personal characteristics. Results: The logistic

regression model was significant in predicting a history of sexual violence ($\chi^2(7) = 173.63, p < .0001$), explaining 15.8% of the variance (Nagelkerke $R^2 = .158$). Odds of experiencing sexual violence were 7.52 times greater for females ($p < .001$) compared to males, and 1.87 times greater for upperclassmen (juniors and seniors; $p < .001$) compared to underclassmen. For every one point a student scored higher on the hookup questionnaire, they were 1.12 times more likely to experience sexual violence ($p < .001$). Those who reported higher alcohol consumption were 2.96 times more likely to experience sexual violence ($p < .001$). Conclusion: Rates of sexual violence victimization amongst our sample (11.1%) were congruent with national statistics (11.2%). This illustrates that sexual violence rates have remained stable and that continued efforts are needed to reduce sexual violence across college campuses. This study confirmed gender, alcohol consumption, and hookups are important risk factors for experiencing sexual violence. The findings support the need for continued education on healthy relationships, sexual health, and gender equity in college students, and the need to provide support for students who are at an increased risk for sexual violence victimization.

Board 303

Comparing the Internal Consistency of Psychological Measurements among People with Different Education and Health Literacy Levels

Xuwei Chen, Elizabeth Schofield, Heather Orom, Jennifer Hay, Marc Kiviniemi, Erika Waters

Purpose: The purpose of this study was to examine and compare the internal consistency of several psychological scales related to risk perceptions in groups with adequate versus limited health literacy and higher versus lower education. Methods: Participants ($N = 1,005$) from a nationally representative GfK (Growth from Knowledge) panel completed eight self-report psychological scales assessing their beliefs about diabetes and colon cancer through an online survey. We used the Newest Vital Sign to assess participants' health literacy (limited health literacy vs. adequate health literacy). We also classified them into two groups with high school or less vs. greater than high school. We compared Cronbach's alphas for each measure between groups with different health literacy and education levels using the Feldt test. Results: Scale internal consistency was significantly lower among people who completed high school or less than those with above high school education for four scales: perceived severity for diabetes (0.70 vs. 0.75, $p = 0.03$), present orientation (0.60 vs. 0.66, $p = 0.04$), need for cognition (0.73 vs. 0.80, $p < .001$), and social desirability (0.61 vs. 0.70, $p = 0.04$). Scale internal consistency was significantly lower among people with limited health literacy than those who have adequate health literacy for five scales: information avoidance for colon cancer (0.83 vs. 0.88, $p = 0.002$), unpredictability for diabetes (0.82 vs. 0.88, $p < 0.001$), perceived severity for diabetes (0.69 vs. 0.75, $p = 0.04$), need for cognition (0.66 vs. 0.82, $p < 0.001$), and social desirability (0.53 vs. 0.68,

$p = 0.001$). Conclusions: Several commonly used psychological instruments elicited questionable internal consistency when applied among populations with limited health literacy and education. To advance health disparity research, we need to revise these instruments, as well as identify new items or alternative conceptualizations of the constructs to target vulnerable populations (e.g., conducting cognitive interviews).

Board 304

The Combination of Immigrant Status and Race/Ethnicity Helps Explain Disparities Related to Online Medical Record Access and Use

Xuwei Chen, Elizabeth Schofield, Jennifer Hay, Erika Waters, Marc Kiviniemi, Heather Orom

Purpose: Despite the potential health benefits associated with online medical records, the rate of use may not be equivalent across demographic groups, which may compound health disparities. The purpose of this study was to examine if online medical record (patient portal) access and use among immigrant groups differed across race/ethnicity. Methods: We used data from the nationally representative Health Information National Trends Survey (HINTS 5 Cycle 1) collected between January and May 2017 ($N = 3,285$). We examined associations between immigrant status and the following three binary outcomes with logistic regression: (1) being offered access to an online medical record by their health care providers/insurers, (2) being encouraged to use one by their health care providers, and

(3) having used one within the past 12 months. We also investigated whether the association between immigrant status and these three outcomes depended on people's race/ethnicity by interacting the two. We applied survey weights and kept sociodemographic variables and internet/insurance/healthcare access as covariates. Results: About 51% of the sample were offered access to an online medical record, 39% were encouraged to use one, and 29% had used one within one year. There were no main effects for immigrant status or race/ethnicity. The association between immigrant status and being offered access to an online medical record depended on Asian race/ethnicity (interaction effect $p = .027$). US-born Asians had the highest adjusted rate of being offered access to an online medical record (67%); however, foreign-born Asians had the lowest adjusted rate (38%). Other interaction effects were non-significant. Conclusions: There were differences in self-reported being offered access to an online medical record as a function of immigrant status for Asians. Therefore, encouraging health care providers/insurers to offer access to an online medical record among foreign-born Asians could be an effective strategy to increase these patients' online medical record use.

Board 305

Behaviors of Children Exposed to Prescription Opioids in Pregnancy

Micah Hartwell, Julie Croff, Ashleigh Chiaf, Florence Breslin, Amanda Morris, Jennifer Hays-Grudo, Karina Shreffler, Stacy Tiemeyer

Purpose: Prenatal exposure to opioids has been shown to significantly impact pre-term infantile neural and motor development and is associated with behavioral problems at 18 months identified through the Child Behavior Checklist (CBCL/1-5) for ages 1-5. The purpose of this study is to explore the behavioral problems during later childhood (ages 9-10) among a national sample of children prenatally exposed to prescription opioids, alcohol, and tobacco. **Methods:** The Adolescent Brain Cognitive Development (ABCD) study recruited children at 22 sites in the United States for a 10-year longitudinal study, including parent and child surveys, medical records, and annual MR scans. Data used for this research include socio-demographic variables and multiple components of the Child Behavior Checklist CBCL/6-18 (for ages 6-18). **Results:** Initial regression models showed that interactions among substances as well as parental education were not statistically significant and were subsequently dropped. The final models indicate that children in the study who were prenatally exposed to opioids ($n = 150$) had higher scores on 19/20 of the scales, while children exposed to alcohol had higher scores on 16/20, and tobacco exposed children were higher on all scales. Current parental illicit use of drugs, continued smoking, and problematic drinking (self-reported as “I drink too much alcohol or get drunk”), is also associated with higher scores on many of the CBCL components. **Discussion:** Our findings indicate that at ages 9 and 10, strong behavioral differences exist for children exposed during pregnancy to prescription opioids, alcohol, and tobacco. Notably, tobacco exposure had universally higher behavioral scores; and prescription

opioids inflated most behavioral scores. Additional research should be done on the long-term effects of substance use exposure.

Board 306

Three Methods of Alcohol Consumption in Women of Childbearing Potential

Andrea Blair, Ashleigh Chiaf, Erica Crockett, Julie Croff

Purpose: Ethyl glucuronide (EtG) concentration in hair samples have become a common tool for alcohol use detection in pre-employment screening as well as alcohol and drug treatment monitoring. The purpose of this manuscript is to evaluate the validity of hair EtG concentrations compared to transdermal alcohol concentration (TAC) and self-reported alcohol use. **Methods:** This trial included 25 adolescent and young adult females who reported at least one heavy drinking episode (≥ 4 drinks) within the past two weeks. All participants were asked to wear a Giner WrisTAS-7 ($n = 21$) or Giner WrisTAS-9 ($n = 4$) alcohol biosensor over a one-month prospective study. Participants visited the lab weekly to complete a detailed self-report of behaviors, including day of drinking events, amounts and types of alcohol use, and length of drinking events. Estimates of blood alcohol concentration (eBAC) were computed from self-report data using the National Highway and Transportation Safety Administration (NHTSA) equation. TAC and eBAC data were categorized into at risk and high-risk drinking events (BAC of > 0.05 and > 0.08 grams alcohol/milliliter blood, respectively). Hair EtG concentration, total number,

moderate and high level of TAC and eBAC drinking events were analyzed with Spearman rank correlation tests for validity comparisons. Results: No significant correlations were found between hair EtG values and total number, moderate, or high levels of detected drinking events by eBAC or TAC. Total number of drinking events detected and number of drinking events > 0.08 using eBAC and TAC methods were significantly correlated with each other (respectively, $r = .33, p < 0.05$; $r = .42, p < 0.05$). Discussion: Our findings indicate that due to the number of false negatives, hair EtG concentrations are not a valid tool for monitoring alcohol use. Results of our study confirm other studies findings that a negative result does not necessarily exclude alcohol consumption.

Board 307

Pinspiration to Drink and Smoke: A Content Analysis of Alcohol and Cigarette Boards on Pinterest

Katie E. Dolphin, Rachel Fiegenbaum

Purpose: Pinterest, an image-based content sharing platform, is the third most popular social media site after Facebook and Instagram. Pinterest users are primarily females living in underserved and underprivileged communities. Pinterest, then, may provide a unique platform for providing information about health behaviors to a population where resources are often lacking. Thus, the purpose of this content analysis was to identify the information being shared regarding drinking- and smoking-related health behaviors. Methods: The top ten most popular alcohol, cigarette, and e-

cigarette boards were analyzed. Each pin ($n = 3,769$) was categorized for type of embedded visual, sex of person depicted, type of general information, type of self-management information, validity of information, and level of user engagement. Frequencies and one-way between group ANOVAs were conducted using SPSS to determine whether differences existed in engagement by type of embedded visual or information presented. Results: Trends emerged for alcohol ($n = 661$), cigarette ($n = 2437$), and e-cigarette ($n = 671$) pins with regard to embedded visual, information presented, and user engagement. Photos of objects were the most common embedded image in alcohol (55%) and e-cigarette (86%) pins, while the majority of cigarette pins (84%) depicted photos of people. Of those pins that portrayed people, 75% ($n = 38$) of e-cigarette pins, 55% ($n = 1,224$) of cigarette pins, and 35% ($n = 41$) of alcohol pins had only men. Recipes (43%) and advertisements (23%) were the most common information presented on alcohol and smoking-related boards, respectively. Concerning user engagement, there were significant differences in engagement based on the type of embedded visual for both alcohol ($p < .05$) and smoking ($p < .05$). Alcohol pins with photos of objects and smoking pins with photos of either people or objects were the most engaging, with these images typically encouraging these behaviors. Conclusions: Pinterest promotes drinking and smoking behaviors to a high-risk population. Practical implications and directions for future research will be discussed.



Board 308

Development and Validation of an Instrument Measuring Determinants of Bystander Intervention to Prevent Sexual Assault: An application of the Reasoned Action Approach

Christine Hackman, Sarah Rush-Griffin, Paul Branscum, Arden Castle, Marina Katague, Marissa Greenband

Purpose: Sexual assault is a major public health issue that disproportionately affects college students. Bystander Intervention (BI) is a common approach to reduce sexual assault in college populations, and is considered the gold standard by public health and governmental organizations. However, few surveys are available to measure and evaluate the predispositions students have towards engaging in BI. Therefore, the purpose of this study was to develop and validate a theory-based instrument with college students at two U.S. universities. The theoretical model used in this study was Fishbein and Ajzen's Reasoned Action Approach. Methods: First, an elicitation of beliefs (i.e., behavioral and normative beliefs) was accomplished to inform items on the survey. Next, the survey was developed and sent to an expert panel to establish face and content validity. Afterwards, the instrument was administered to undergraduate college students ($n = 291$), and the following psychometric properties were evaluated: construct validity using confirmatory factor analysis (CFA), and internal consistency reliability using Cronbach's alpha. Results: Data were fit into two separate models to assess fit. In the first model, a 4-factor solution was evaluated (intentions, attitudes, perceived norms, and

perceived behavioral control), and results showed that overall fit was modest (Root Mean Square Error of Approximation (RMSEA) = 0.121; Tucker Lewis Index (TLI) = 0.773, and Comparative Fit Index (CFI) = 0.803. However, in the second model, a 7-factor solution was evaluated (intentions, instrumental and experiential attitudes, injunctive and descriptive norms, capacity and autonomy), and results showed that overall fit significantly improved (RMSEA = 0.058; TLI = 0.948, and CFI = 0.958. Discussion: Valid and reliable instruments are greatly needed in this area of public health, especially those tailored to BI. Researchers and practitioners examining BI in college students can use this instrument to measure theory-based determinants of BI to reduce the rate of sexual assault on college campuses.

Board 309

Examining College Student Perspectives of a Theory-based Social Marketing Campaign to Promote Bystander Intervention

Christine Hackman, Ellis Hagadorn, Faith Lucas, Julia Alber

Purpose: Bystander intervention (BI) is an important approach for decreasing the rate of sexual assault on college campuses. Properly developed, theory-based social marketing campaigns can shift beliefs regarding sexual assault and contribute to behavior change in the community. The purpose of this study was to examine student feedback regarding a Reasoned Action Approach (RAA)-based social marketing campaign aimed at



increasing BI intention and behavior. Methods: Six audio-recorded focus groups were utilized to provide feedback on social marketing messages that have been developed based on the results from a previous study examining RAA-related barriers and facilitators to BI in college students. Trained researchers facilitated conversations around participant ($n = 56$) opinions and ratings of messages. Transcripts were created and pseudonyms were used to protect participant identity. Results: The data were cleaned for clarity and organized to prepare for qualitative and quantitative analysis. Thematic analysis was used to orient the researchers with the data using NVivo 12 for Windows (QSR International, 2015). The final eight themes included: message understanding; personalization or tailoring; message content; message design and features; message appeal; trust in message; personal preferences; and delivery channels. Within each theme there were two to four sub-themes. For example, message content included the sub-themes color, font, staged/unnatural, and layout. Mean rating of each message was computed (1 = strongly dislike, 10 = strongly like). Means ranged from a 4.05 (message #6) to 7.34 (message #1). Discussion: Edits will be made to the messages based on the results, and messages will be tested in a wider population for final feedback. The finalized messages will be studied for effectiveness in attitudinal and behavioral improvements in BI. University campus populations would benefit from theory-based health communication messages, as they could influence beliefs and, as part of a larger intervention, shift behavior in a high-risk population.

Board 310

Geographic Variation in Opioid-related Diagnosis in Privately Insured Youth in the United States Between 2005 and 2016

Diah Husnulhotimah, Douglas Leslie

Purpose: Information on the prevalence of opioid-related diagnosis across states in the United States is important to guide policies that aim to curb the opioid epidemic. However, the literature in this area is limited. Also, to the extent of our knowledge, this is the first study to examine differences in opioid-related diagnosis in youth in rural versus urban areas. The objectives of this study were to estimate the prevalence of opioid-related diagnosis in privately insured youth aged 12 to 25 years in the 50 states of the United States and to observe its trend between 2005 and 2016. Methods: An observational study of claims data produced by MarketScan was performed. Broad diagnostic inclusion criteria were set using International Classification of Diseases (ICD) – 9 and ICD-10 codes covering opioid misuse, abuse, and dependence. Kruskal-Wallis analysis of variance was used to determine the significance of changes in the prevalence between 2005 and 2016. Results: There was a significant increase over time in the prevalence of opioid-related diagnosis in adolescents aged 12 to 17 years (0.5 per 10,000 people in 2005 to 6.3 per 10,000 people in 2016, $p < .0001$) and young adults aged 18 to 25 years (3.8 per 10,000 people in 2005 to 62.3 per 10,000 people in 2016, $p < .0001$). For both age groups, we found considerable differences across states in both the prevalence of opioid-related diagnosis and the rate of increase over time, although trends were similar in rural versus urban

settings. Conclusions: Rates of opioid-related diagnosis vary considerably across states and are increasing dramatically over time. The results of this study will be useful to health care providers and policymakers as they design interventions and policies to combat the opioid crisis.

Board 311

Examining Differences in Correlates of Health Behaviors among Immigrants and U.S.-born Adults

Ann Amuta-Jimenez, Wura Jacobs, Sharon Harris

Purpose: Immigration and subsequent assimilating into the host's culture sometimes poses challenges to health-related behaviors of immigrants which can have significant health consequences different from those who are U.S. born. This study examined the extent to which foreign-born (immigrant) and U.S.-born adults differ in determinants of e-cigarette use and excessive drinking behavior. **Methods:** Data for the study were from the 2018 Health Information and National Trends Survey (HINTS). Linear and ordered logistic multiple regression analyses were used to examine the significant predictors of e-cigarette use and alcohol use among those who are immigrants and U.S. born. **Results:** The study had a total of 3,504 participants. 85% were U.S. born. For e-cigarette use likelihood among U.S.-born Americans, being married ($OR = 1.254$, $95\%CI = 1.10-3.43$), increasing age ($OR = 1.274$, $95\%CI = 1.196-1.357$), and educational level ($OR = 1.204$, $95\%CI = 1.196-1.357$) increased odds e-cigarette use.

U.S.-born blacks were almost twice as likely ($OR = 1.944$, $95\%CI = 1.101-3.431$) to report e-cigarette use compared to U.S.-born whites. For immigrants, increasing age was the only statistically significant factor ($OR = 1.274$, $95\%CI = 1.196-1.357$) that increased the odds of e-cigarette use. Regarding excessive drinking, males ($\beta = -.042$), earning higher income ($\beta = .126$), being more educated ($\beta = -.049$), being married ($\beta = .041$), having a cancer family history ($\beta = .060$), and being younger ($\beta = -.037$), were significantly associated with excessive drinking behavior among U.S.-born individuals; while having higher income ($\beta = .167$) was the only variable significantly associated with excessive drinking behavior among immigrants. **Conclusion:** In practice, e-cigarette and drinking interventions seldom consider immigration status. Such an approach may be problematic because as results indicate, diverse characteristics and processes have differential influence on the health behaviors and outcomes of individuals who are U.S. born or immigrants. Cultural and linguistic differences may mitigate what influences immigrants' health behaviors leading to erroneous program planning, implementation, and evaluation.

Board 312

Movin' for LIFE: Health Promotion in an Underserved Primarily African American Community

Carolyn Johnson, Jenette Gustat, Megan Knapp, Revonda Darensbourg, Catherine Haywood, Leann Myers



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Purpose: Community-based health promotion is a desirable public health action especially in underserved minority areas. Community-wide interventions, however, can be difficult and expensive. The Movin' for LIFE health promotion was a major research activity of the Tulane Prevention Research Center funded by Centers for Disease Control and Prevention (CDC). **Methods:** Movin' for LIFE involved a coalition of community residents, an extensive social marketing campaign, use of community health workers and program champions, community-based cooking classes, a family fun and health fair, a community-partnered 5K, and community-organized walking, dancing, and yoga. Attendance data indicated that activities were well attended and well received. Outcome data are community-based, rather than individual, and consist of observations of community residents who are outside and physically active at parks and playgrounds as well as on streets and sidewalks. Additional observations at food stores were expected to show improved food offerings. Preliminary outcome data did not show significant differences between intervention and control neighborhoods and these data will be discussed for lessons learned. A translational process is underway by the New Orleans Health Department for dissemination to other areas of the city.

Board 313

**Attitudes towards the Opioid Crisis:
Differences between Metropolitan and
Non-metropolitan Areas in Central Texas**

Marcia G. Ory, Shinduk Lee, Matthew L. Smith, James N. Burdine

Purpose: The opioid crisis has rippled across America, and there is an increasing concern associated with the spread of opioid addiction in non-metropolitan areas. Yet, data are scarce to inform preventive or risk mitigation efforts in non-metropolitan areas, and particularly those that have yet to be impacted by the crisis. This study examined metropolitan and non-metropolitan differences in concerns about opioids and support for different strategies for reducing opioid use disorder (OUD) risk in a non-high risk area. **Methods:** This study used the 2019 Brazos Valley Regional Health Assessment data collected using the combination of stratified random sampling and clinic-based purposive sampling in Central Texas ($N = 700$). The data included three metropolitan ($n = 430$) and five non-metropolitan counties ($n = 270$). The primary outcome variables were perceived concern about the opioid crisis in their community, perceived likelihood of people getting addiction treatment, and support for strategies to reduce OUD risks. Multiple multivariable regression models were used to examine non-metropolitan and metropolitan differences in the outcome variables. All models were adjusted for age, sex, ethnicity, race, marital status, education, and household income. **Results:** A majority of participants were female (60%), non-Hispanic (88%), and white (83%). About 60% of non-metropolitan participants and 49% of metropolitan participants were concerned about opioids use and abuse in their community. Perceived likelihood of getting addiction treatment was significantly lower among the non-metropolitan participants

(67%) than metropolitan participants (73%) ($p = 0.031$). Non-metropolitan participants were significantly less likely to support creating legal injection sites ($p = 0.042$) or making needle exchange programs legal ($p = 0.046$). Discussion: This study shows that the non-metropolitan participants had less access to treatment and support for prevention or mitigation strategies. Differing attitudes by respondents from non-metropolitan and metropolitan areas indicate the importance of tailoring prevention and mitigation efforts to address OUD in advance of an impending public health crisis.

Board 314

The Effectiveness of the Family Health History-based Colorectal Cancer Prevention Workshop on the Adoption of Fecal Occult Blood Testing among Chinese Americans

Ming Li, Yu-Lyu Yeh, Haocen Wang, Ping Ma, Oi-Man Kwok, Lei-Shih Chen

Purpose: Chinese Americans, the largest subgroup of Asian Americans, suffer from high incidence and death rates of colorectal cancer (CRC). As an important risk factor for CRC, family health history (FHH) is an effective clinical and public health tool to classify CRC risks and motivate people to adopt cancer risk-reduction behaviors. Although the U.S. Preventive Services Task Force recommends that individuals aged 50-75 years undergo annual fecal occult blood testing (FOBT), Chinese Americans are less likely to follow this screening guideline compared to non-Hispanic whites. The purpose of this study was to assess the

effectiveness of FHH-based CRC prevention workshops on Chinese Americans' adoption of FOBT. Methods: A total of 334 Chinese Americans aged between 50-75 years who were noncompliant with the CRC screening recommendations participated in the FHH-based CRC prevention workshops. Attitudes, self-efficacy, perceived benefits, perceived barriers, intention, and the behavior of undergoing FOBT were assessed at baseline, immediately post-workshop, and at two-week follow-up. Linear mixed models were employed to assess the effects of the workshop on the changes of psychological outcome variables. Results: Participants' mean age was 61.2 years ($SD = 6.4$; range: 50-75), and 62.4% were women. At the two-week follow-up survey, 94.5% of the participants reported that they had undergone FOBT. Participants' attitudes, self-efficacy, and intention for undergoing FOBT significantly increased ($ps < 0.01$) immediately post-workshop, and the changes were maintained at two-week follow-up; participants' perceived barriers to undergo FOBT significantly decreased ($p < 0.001$) immediately post-workshop, and the changes were maintained at two-week follow-up. Conclusions: This FHH-based CRC prevention workshop successfully increased the Chinese Americans' adoption of FOBT. Associated psychological outcomes were also effectively changed in expected directions. Expanding this FHH-based CRC prevention workshop to underserved Chinese Americans and other Asian communities are needed.

Board 315

Marijuana Vaping and Associated Respiratory Symptoms and Pulmonary Diseases: An Exploratory Study

Su-Wei Wong, David K. Lohrmann, Hsien-Chang Lin

Purpose: An emerging threat of chemical exposure from e-cigarette use has recently surfaced as the CDC reported more than 500 cases of severe pulmonary diseases and 6 deaths among e-cigarette users in September 2019. Many of these patients had reportedly used e-cigarette products containing THC, the principal psychoactive constituent of marijuana, but the connection still lacks scientific substantiation. This exploratory study aimed to examine the associations between vaping marijuana by using e-cigarette devices and experiencing respiratory symptoms and pulmonary diseases with nationally representative data. **Method:** This cross-sectional exploratory study involved adult e-cigarette users aged 18 and older whose data were extracted from the Population Assessment of Tobacco and Health survey Wave 3 (2015-2016). Two weighted negative binomial regressions were conducted to examine the associations between marijuana vaping and past-year (1) respiratory symptom counts (including wheezing or whistling in chest, wheezing after exercise, and dry cough at night) among subjects with symptom history ($n = 1,115$), and (2) diagnosis counts of pulmonary diseases (including COPD, chronic bronchitis, emphysema, asthma, and others) among e-cigarette users ($n = 3,068$). Both models controlled for smoking status, marijuana use, and sociodemographic characteristics. **Results:** This study found that

among current e-cigarette users, those who vaped marijuana were more likely to have diagnoses of more pulmonary diseases (IRR = 1.43, $p < .05$) in the past year. However, marijuana vaping was not associated with the number of respiratory symptoms among e-cigarette users who had reported symptoms in the past. **Conclusions:** This study found that marijuana vaping was associated with higher numbers of pulmonary disease diagnoses. As more states legalize recreational marijuana, it is crucial to regulate marijuana products (e.g., potency, extraction, and quality of marijuana) that could be consumed with e-cigarette devices to prevent adverse pulmonary effects. Longitudinal health effects of vaping marijuana should be further studied to inform regulatory policies and behavioral and educational interventions.

Board 317

Associations between Time Spent on Social Networking Sites and Normative Misperceptions Related to Posting Alcohol-related Content

Dana Litt, Melissa Lewis

Purpose: Adolescents' and young adults' alcohol-related social networking site (SNS) behavior is an emerging health behavior challenge. Research indicates that both overestimating risk behavior and posting alcohol content on SNS are associated with greater alcohol use. The purpose of this study is to determine whether individuals who spend more time on SNS are more likely to overestimate how often peers post about alcohol on SNS (i.e., perceptions of others'

behavior; descriptive norms) and how much peers approve of posting about alcohol (i.e., perceptions of others' attitudes; injunctive norms) on SNS. Methods: A sample of 15-20 year olds ($N = 306$, 47% male) completed a baseline survey as part of a larger study. Participants reported over a typical week how many SNS alcohol posts they make, how many SNS alcohol posts they think their peers make, how many SNS alcohol posts they approve of making, and how many posts they think their peers approve of making and how many days per week they check their Facebook, Instagram, and Snapchat accounts. Results: On average, participants believed others posted significantly more alcohol posts per week than they actually do ($t = 10.2$, $p < .01$) and that other people approved of posting significantly more posts than they actually do ($t = 2.34$, $p < .05$). These discrepancies were associated with more frequent checking of Instagram (descriptive: $b = .14$, $t = 1.99$; injunctive: $b = .18$, $t = 2.59$) and Facebook (descriptive: $b = .17$, $t = 2.56$; injunctive: $b = 0.17$, $t = 2.50$), but not Snapchat ($b = .02$, $t = 0.24$; injunctive: $b = 0.12$, $t = 1.79$). Conclusions: These findings highlight the importance of gaining a better understanding of why and for whom SNS impact alcohol-related cognitions and behaviors in order to better tackle this emerging and important health challenge.

Board 319

Alcohol Use among Chinese Students Attending an American Public University

Jay Maddock, Rose Marie Ward

Purpose: International college students have been rapidly increasing in the United States (US) from 3.3% of students in 2006-2007 to 5.5% in 2017-2018, accounting for over a million students, with over 1/3 (363,341) coming from China. In China, heavy drinking is increasing, with 20% students reporting binge drinking in the past month. Alcohol use is higher among Chinese students with greater Western cultural orientation. However, little is known about alcohol consumption among Chinese students in the United States. The aim of this analysis was to assess rates of alcohol use and social norms among Chinese college students at a U.S. university. Methods: In 2017, an online cross-sectional survey of students studying at a large midwestern public university was conducted. International students born in Mainland China ($n = 535$) were retained for analysis. Results: Most respondents lived on campus (63.0%) and were male (53.2%). The average age was 20.2 ($SD = 1.6$). Only 38.1% had ever drunk alcohol. Among those who had, participants reported drinking an average of 0.14 ($SD = .51$) days and 0.29 drinks ($SD = 1.04$) in the typical week. During the last month, the highest number of drinks consumed on one occasion was 0.36 ($SD = 1.46$). Only 27.9% thought that the average college student drank once a week or more, while 40.7% thought the average college student drank never or less than once a month. Respondents reported that 65.9% of their closest friends drank less than once a month. Half of respondents (51.7%) would disapprove of students drinking every weekend and about three-quarters (73.9%) would disapprove of drinking alcohol daily. Conclusions: Heavy alcohol use was almost nonexistent among international Chinese

students. Social norms data was in line with their alcohol use. More research is needed on why these social groups are protected from heavy alcohol consumption and how this may be used to influence other groups.

Board 320

A Qualitative Analysis of Factors Influencing African American Women's Decision-making Processes and Preferences Regarding Breast Reconstruction: Preliminary Findings

Shahnjayla K. Connors, Isabel (joint 1st) Martinez Leal, Vijay Nitturi, Valentina Maza, Chisom Odoh, Stacey Reyes, Lorraine R. Reitzel

Background: Breast reconstruction (BR) has been associated with quality of life (QOL) improvements in breast cancer survivors; however, African American (AA) women are significantly less likely to receive BR compared to Caucasian women. Despite this, few studies have explored BR decision-making in AA women. Here we report preliminary findings of a qualitative study exploring individual, sociocultural, and contextual factors influencing AA women's BR decision-making processes and preferences. Methods: In spring/summer 2019, we conducted semi-structured, face-to-face interviews with 10 AA breast cancer survivors, between 1-21 years since diagnosis, who received mastectomy and had ($n = 7$) or had not ($n = 3$) undergone BR (aged 29-66; median 47.5). A grounded theory approach using constant comparison analysis was adopted to understand the contexts and processes informing the participants' BR

decision-making. Results: Our core category, "becoming whole again," described participants' decision-making process as encompassing the subcategories of "empowered decision-making," fueled by "giving back and receiving" communal support from church and AA survivor groups, as a means of healing and "maintaining psychological strength" to move forward from breast cancer to physical and psychological wholeness through BR. A culturally, spiritually, and pragmatically grounded body ethic guided participants' selection of BR; focused on regaining biopsychosocial wholeness, rather than body aesthetics. Socioeconomic factors (e.g., lack of medical insurance and high deductibles), as well as comorbidities including obesity, influenced the women's access to BR and BR decision-making. Additionally, participants preferred autologous options due to uncertainties about breast implants. All participants expressed the need for greater quality pre-operative information on treatment and BR options. Conclusions: Our findings indicate that while AA breast cancer survivors are choosing BR, a distinct body of cultural and spiritual influences guides their experiences, preferences, and BR decision-making. Understanding AA women's preferences regarding BR is essential to ensuring equal access, and culturally relevant and quality patient-centered care.

Board 321

False-negative Alcohol Use Disorder Identification Test (AUDIT) Results in a Rural Primary Care Setting



**American Academy of Health Behavior
Poster Session
Tuesday, March 10, 2020**

Justin McDaniel, David Albright, Lauren Holmes, Michael Lawson, Shanna McIntosh, Kelli Godfrey

Purpose: The purpose of this study was to estimate the prevalence of false-negative Alcohol Use Disorders Identification Test (AUDIT) screening results among patients in a screening, brief intervention, and referral to treatment (SBIRT) program in rural Alabama, and to determine factors associated with false-negative AUDIT results. **Methods:** From September 2018 to June 2019, patients ($n = 4,023$) were screened for alcohol abuse via the AUDIT – a 10-item questionnaire – in a medical facility lobby prior to a regularly scheduled appointment. Socio-behavioral variables were also collected at this time. Overall AUDIT scores above 6 for females and 7 for males were considered “positive,” and resulted in a recommendation for brief intervention – the lowest service level in the SBIRT program. We also identified individuals who consumed alcohol at levels above the U.S. recommended limit for safe consumption using the first three questions of the AUDIT. We defined unsafe alcohol consumption as ≥ 5 drinks in a single day and/or > 14 drinks in a week for males and > 7 drinks in a week for females. We also estimated the relationship between socio-behavioral factors and false-negative screening results in a multivariable logistic regression model. **Results:** Overall, 103 patients (2.56%) screened positive for risky alcohol consumption based on overall AUDIT scores and 676 patients (16.80%) exhibited alcohol consumption patterns above recommended limits. Furthermore, of the 3,920 patients who screened negative on the AUDIT, 576 (14.69%) exhibited alcohol consumption patterns above recommended

limits (i.e., false-negative). Our logistic regression model revealed that tobacco use was the strongest predictor of a false-negative AUDIT results ($OR = 2.14$, $95\%CI = 2.06, 2.22$). Other significant predictors included being female, nonwhite, of younger age, and a veteran. **Conclusions:** Intervention recommendations based on AUDIT results should be informed by overall AUDIT scores and daily/weekly alcohol consumption patterns.

Board 322

Reducing Negative Separation from a Vocational Training Program: An Application of Student Employees Prevention Services and Rites of Passage Intervention

Theresa Okwumabua, Jebose Okwumabua, Su Chen, Gregory Washington

Purpose: The study examined the effectiveness an African-centered Let the Circle Be Unbroken-Rites of Passage (LCBU-ROP) intervention model as a supplement to the student employees’ standard substance use prevention services (SUPS), referred to as SUPS Plus LCBU-ROP, compared to the SUPS only intervention as measured by attitudinal and behavioral indices, and graduation rates among students screening positive for substance use at entry into a national vocational training center. **Methods:** Of 148 students, aged 16 to 24, that screened positive for substance use at program entry, 116 participated in SUPS Plus LCBU-ROP, while 32 engaged in SUPS only. A 54-item attitudinal and behavioral questionnaire was

used for data collection. Data on participants' program entry, substance use, follow-up, and exit were obtained from the center's database. Paired t-test, Pearson product-moment correlation, logistic ridge regression, Chi-square, and Analysis of Variance were employed in data analysis. Results: Participants in SUPS Plus LCBU-ROP significantly improved self-esteem ($p = .024$), conflict resolution ($p = .052$), reduction in marijuana use ($p = .015$), and graduation rate ($p = .001$), compared to their counterparts in SUPS. Pearson's product-moment correlation for all variables among participants in SUPS Plus LCBU-ROP were statistically significant ($p = .001$), with strongest association between "self-esteem" and "body image" ($r = .765$). Logistic ridge regression revealed a marginal effect ($p = .067$) on non-marijuana use for conflict resolution. Approximately 70% of participants screening negative at follow-up completed their trade. Conclusion: Findings suggest that incorporating an African-centered rites of passage intervention program into the standard prevention modality could be effective in reducing substance use and increasing graduation rates among youth enrolled in a national vocational job training center. The implications for future prevention intervention approaches, and lessons learned are discussed.

Board 323

Midwives' Intent to Disseminate Alcohol Abstinence Messages According to Standardized Guidelines: A Theory-based Investigation

Olufunto Olusanya, Adam Barry

Purpose: Pregnant women continue to consume alcohol despite decades of scientific evidence documenting unfavorable outcomes for alcohol-exposed babies, in the form of fetal alcohol spectrum disorders. In United States, 10.2% of pregnant women report alcohol use at least once within the past 30 days. The midwife's role is fundamental in fostering women's ability to abstain from alcohol use before conception and during pregnancy. Applying the Theory of Planned Behavior (TPB), this cross-sectional study sought to examine midwives' intent to (1) disseminate the United States Surgeon General's (USSG) prenatal alcohol guidelines, and (2) screen for prenatal drinking behaviors. Methods: Approximately 77 midwives – both Certified Professional Midwives (CPMs) and Certified Nurse Midwives (CNMs) - completed the 40-item online questionnaire assessing TPB constructs for attitude, subjective norms, perceived behavioral control (PBC), and behavioral intent to disseminate prenatal drinking guidelines and screen for prenatal drinking behaviors. An example of a PBC question was, "I am confident that I can share information on the risk of prenatal alcohol use if I wanted to." Internal consistency of each item scale was Cronbach's alpha greater than or equal to 0.70. Results: Participants' subjective norms (coefficient = 0.84, $p = 0.002$) and attitude (coefficient = 5.56, $p = 0.029$) were significantly associated with midwives' intent to disseminate information reflecting USSG's guidelines. Midwives' intent (coefficient = 0.10, $p = 0.041$) was also a strong predictor of assessing prenatal drinking behaviors via patients' discussions. Additionally, midwives' intent (coefficient =

0.34, $p = 0.013$) and years of midwifery practice (coefficient = -0.11, $p = 0.037$) were significantly predictive of the frequency with which these communications occurred. Conclusions: Findings support the notion that fostering positive attitude and promoting social norms could positively impact midwives' communication on prenatal alcohol-use.

Board 324

High-risk Social Circles: Associations between Personal Alcohol Use and History of Sexual Assault and Peer Drinking Behavior

Megan S. Patterson, Tyler Prochnow, Alex M. Russell, Adam E. Barry

Introduction: Hazardous drinking and sexual violence among college students remain public health concerns. Alcohol use, by perpetrator and/or victim, is implicated in a majority of sexual assaults among college students, and is often influenced by consumption within personal social networks (i.e., egocentric networks). The purpose of this study was to use egocentric network analysis to assess factors, including sexual assault victimization, related to having heavy drinkers in one's egocentric network. Methods: 697 students (77.2% female; 68.9% white) completed online surveys measuring demographics (age, sex, grade, Greek-life status), alcohol consumption (AUDIT scores), and sexual assault after turning 18. Respondents were asked to indicate five people they feel closest to in their life, and report drinking behaviors for each person. Linear regression assessed whether

demographic variables, sexual assault victimization since 18, and drinking behaviors were associated with having a higher percentage of network ties who typically drink 5+ drinks in one sitting. Results: Approximately one in five respondents (17.8%; $n = 124$) reported experiencing sexual assault since the age of 18, while 12.8% ($n = 89$) registered risky drinking scores on AUDIT, and 36.6% identified at least one person who typically drinks at least five drinks when they consume alcohol. Regression analysis ($R^2 = .171$, $p < .001$) suggested being involved in Greek-life (i.e., fraternity or sorority; $\beta = .194$, $p = .008$), experiencing sexual assault since turning 18 ($\beta = .176$, $p = .038$), and having higher AUDIT scores ($\beta = .361$, $p < .001$) were related to having a higher percentage of people within one's egocentric network who typically consume 5+ drinks in one sitting. Conclusions: Personal drinking behaviors and experiencing sexual assault after the age of 18 were associated with being connected to heavy drinkers in this sample. Because alcohol use often predicates sexual violence on college campuses, higher-risk social circles could increase survivors' risk of re-victimization. Future research using network perspectives could help untangle complexity of college student sexual assault and drinking.

Board 325

Moderating Effect of Sex on the Relation of Mental Illness Diagnosis and Perceived Social Support in Homeless Adults



**American Academy of Health Behavior
Poster Session
Tuesday, March 10, 2020**

Seyed Khalafi, Chisom Odoh, Ashley Taylor, Michael S. Businelle, Darla E. Kendzor, Lorraine R. Reitzel

Purpose: Perceived social support (SS) is associated with healthier behaviors among homeless adults. Homeless adults with mental illness (MI), however, may receive less social support than those without MI, adding a barrier to achieving optimal health. The potentially inverse association between MI and SS may be especially marked among men, as women are generally more likely to seek and receive SS relative to men. This study examined the association between MI and perceived SS, and moderation by sex, to begin to elucidate this area. **Methods:** Adult participants were recruited from 6-homeless serving agencies in Oklahoma City ($N = 526$; 63.7% men, $Mage = 44.5 \pm 11.8$). Participants self-reported whether they had a history of MI diagnosis (i.e., depression, schizophrenia or schizoaffective disorder, bipolar disorder, post-traumatic stress disorder, or anxiety disorder) and perceived SS as measured via the International Support Evaluation List (ISEL). The ISEL has 3 subscales including: tangible/material aid, belonging/empathy or acceptance from others, appraisal/availability of others to talk to. Linear regressions estimated associations between history of MI and perceived SS, controlling for sex, age, race, lifetime months homeless, marital status, number of children, employment status, education, and veteran status. Moderation of this relationship by sex was examined. **Results:** Overall, 65.1% of participants ($n = 342$) had a history of MI. More women had MI than men (75.4% vs. 59.1%) and women reported greater appraisal SS than men ($p < 0.03$). In adjusted analyses, MI was inversely associated with belonging,

tangible, and total SS ($p < 0.05$), but not appraisal SS. Sex was not a significant moderator of any associations. **Conclusions:** Homeless adults with a history of MI perceive lower SS, particularly material aid and availability of others for activities, than those without MI. Interventions that focus on increasing SS in those with MI diagnosis may yield health or quality of life benefits. Longitudinal studies should investigate this possibility.

Board 326

Anxiety Sensitivity and Fast-food Ordering Habits among African-American Adults

Vijay Nitturi, Michael Zvolensky, Lorna McNeill, Ezemenari Obasi, Lorraine Reitzel

Purpose: African-American adults experience high rates of overweight/obesity, which is linked to chronic diseases. Fast-food consumption habits may contribute to overweight/obesity. Anxiety sensitivity, a transdiagnostic and trait-like fear of anxiety-related sensations, has been linked to various health-hazardous behaviors, including high caloric intake. Here, we examine whether anxiety sensitivity is associated with fast-food ordering habits within an African-American convenience sample. **Methods:** Of 124 African-American adults (79.4% women; $Mage = 49.3 \pm 11.6$; 84.8% overweight/obese) participating in a study about stress and health, 107 (86.3%) reported eating from a fast-food restaurant in the last month. Participants completed the Anxiety Sensitivity-Index III, which has a total score and physical, cognitive, and social concerns

subscales. Investigator-generated items were frequency of ordering “supersized” quantities of fast food (e.g., cheeseburgers, fries), and healthy items (e.g., salads, oatmeal, yogurt), respectively, from “never” to “always.” Linear regressions, controlling for body mass index, negative affect (depression and anxiety), age, and sex were used to examine relations of interest. Results: Anxiety sensitivity (total) was associated with greater frequency of ordering supersized fast-food ($B = .019$, $SE = .008$, $p = .029$), with results driven by the physical subscale (e.g., fear of physical symptoms like rapid heartbeat; $B = .014$, $SE = .017$, $p = .006$). An identical pattern, with inverse associations, was found for the frequency of ordering healthy items from fast-food restaurants (total: $B = -.026$, $SE = .011$, $p = .026$; physical: $B = -.056$, $SE = .024$, $p = .020$). Conclusions: Health-hazardous behaviors may be enacted as ways to cope with anxiety sensitivity. Results indicated that fear of physical anxiety-related sensations was associated with fast-food ordering habits that may predispose adults to overweight/obesity and associated diseases. Thus, known interventions to reduce anxiety sensitivity may benefit African-American adults who are at-risk of overweight/obesity via calorically-dense fast-food consumption. Results also bolster a growing literature suggesting that physical concerns may be particularly relevant among African-American adults with anxiety sensitivity and extend them to linkages with fast-food ordering habits.

Board 327

College Students’ Perceptions of Peer Alcohol Use: A Social Network Analytic Approach

Alex Russell, Megan S. Patterson, Adam Barry

Purpose: Hazardous alcohol use among the college student population represents an ongoing public health issue. College students’ perceptions of peer alcohol use often influence their personal alcohol consumption patterns. These perceptions are traditionally studied by asking respondents to indicate the drinking behaviors of “typical students” at their institution. Measures such as these, however, fail to capture the unique social influence of a student’s immediate, most proximal peers. This study presents egocentric social network data assessing the relationship between students’ personal drinking behaviors and those of their closest social ties in a large sample of university students. Methods: 697 college students participated in the study by reporting on demographic information, alcohol use (AUDIT scores), and egocentric networks. Egocentric network variables (network composition, homophily, and structural holes) were created in E-Net software. Descriptive statistics and hierarchical linear regression analyses predicting individual AUDIT scores were conducted in SPSS. Results: Most egos (95.1%, $n = 663$) nominated at least one person in their network that drinks alcohol, with 35.7% ($n = 249$) indicating their entire egocentric network drinks. Linear regression analysis revealed a significant model ($R^2 = .385$, $F = 24.96$, $df = 696$, $p < .0001$), with network variables accounting for 33.4% of total

variance in AUDIT scores. The proportion of egocentric networks that drink ($\beta = .134$, $t = 3.03$, $p = .003$), drink at least twice per week ($\beta = .105$, $t = 3.01$, $p = .003$), drink five or more drinks when they consume alcohol ($\beta = .217$, $t = 6.20$, $p < .001$), and drink six or more drinks in one sitting at least monthly ($\beta = .159$, $t = 3.71$, $p < .001$) were all network variables related to higher individual AUDIT scores. Discussion: Future studies would benefit from utilizing an SNA approach to capture the nuance associated with individuals' perceptions of close others' alcohol use and their own drinking behaviors. Interventions aimed at reducing collegiate drinking should consider the interpersonal nature of drinking behaviors among college student networks.

Board 329

Predicting Emotional Abuse among a Sample of College Students

Mandy Spadine, Megan S. Patterson, Sydney Brown, Jordan Nelon, Beth Lanning, Dawn Johnson

Purpose: Interpersonal violence (IPV) is a growing issue on college campuses. Though emotional abuse can lead to other types of violence (sexual, physical), little research has investigated emotional abuse among college students. The purpose of this study was to examine factors related to emotional abuse and determine whether previously established risk factors for IPV explain emotional abuse specifically. Methods: 601 undergraduates from one large public university in the Midwestern United States and 756 undergraduates from one large

public university in the Southern United States completed an online survey measuring demographic information, behavioral variables (viewing porn, alcohol consumption, and hooking up), and history of violence (witnessing a father abuse his spouse, emotional abuse history). Descriptive statistics and binary logistic regression analyses predicting emotional abuse victimization were conducted in SPSS. Results: Thirty-five percent of respondents indicated a history of emotional abuse. The logistic regression model significantly predicted a history of emotional violence (Nagelkerke $R^2 = .144$, $p < .0001$). Odds of reporting a history of emotional abuse were increased 3.85 times for females ($p < .0001$), 1.62 times for white students ($p = .001$), 1.24 times for each increase in grade classification ($p < .0001$), and 2.10 times for people who witnessed their father abuse his spouse ($p = .001$). Frequent pornography use ($p = .002$), higher alcohol consumption ($p < .0001$), and higher hookup questionnaire scores ($p < .0001$) were also significantly related to reporting a history of emotional abuse. Conclusion: Findings confirmed several individual factors that were related to other types of violence were also related to emotional abuse (gender, drinking, hookups). With more than a third of the student sample reporting emotional abuse victimization, collegiate administrators should prioritize educational efforts and support services for IPV on college campuses. Future research should consider interpersonal, organizational, and political factors related to emotional abuse in this population.

Board 330

Exercise in the Treatment of Addiction: A Promising Approach to a Growing Problem

Mandy Spadine, Megan S. Patterson, Alex Russell, Taylor Graves-Boswell, Jason Sartor, Shana Walsh, Katie Heinrich

Purpose: Exercise has been recognized as a promising and emerging treatment for individuals recovering from addiction. The purpose of this systematic review was to synthesize all scientific literature related to the use of exercise as a means to improve, sustain, or treat addictions, and to provide suggestions for the future use of exercise as a treatment method. **Methods:** Using PRISMA guidelines, GoogleScholar, PubMed, PsycInfo, ERIC, Scopus, and Web of Science databases were searched to identify articles that used exercise as a treatment for addiction. To be included, peer-reviewed studies had to use human subjects to investigate the relationship between exercise and the treatment or recovery of addiction. Garrard's Matrix Method was used to extract data from reviewed articles ($n = 26$). **Results:** Exercise as a treatment for addiction recovery has been primarily investigated using experimental study designs (i.e., quasi-experimental, randomized control trial). Of the studies reviewed, 73% reported exercise had a positive addiction recovery effect (e.g., increased days of abstinence, reduced cravings, reduced use). Most studies (77%) occurred in a rehabilitation facility and 81% used exercise as a component of addiction treatment. Improvements in quality of life, emotional management skills, mental health, and physical fitness were also reported in the literature as a result of exercise interventions.

Variation concerning the type (i.e., aerobic, resistance training, Yoga), frequency, duration, and intensity of exercise were revealed across studies. **Discussion:** Literature review results affirm that exercise can be a helpful aspect of addiction treatment. Future research should investigate whether different exercise settings (e.g., group-based exercise versus individual) influence treatment effectiveness and whether results vary by addiction type. Exploring exercise maintenance and the long-term outcomes following discharge from treatment facilities are also recommended. While prevention of addiction is preferable, providing the most effective treatments possible is critical for improving public health.

Board 331

Campus Integration Moderates the Association between Psychological Resilience and Anxiety among Underrepresented Minority College Students

Mary Steinhardt, Jaylen Wright, Erum Whyne, Henry Lehrer, Jihun Woo

Purpose: Generalized anxiety disorders are among the most prevalent mental health concerns for college students. Underrepresented students are at an increased risk for anxiety given the unique academic and social challenges of adjusting to college, including a sense of isolation. A critical component of reducing anxiety is the ability to recover from adversity, termed psychological resilience. The association between resilience and anxiety may be heightened by strong integration with the

college campus. Therefore, we examined whether campus integration moderated the association between resilience and anxiety among underrepresented minority college students. Methods: Students ($N = 446$; Mean age = 19.06; 62.4% first-generation) at a large public institution completed a Qualtrics survey near the end of the semester. Hierarchical multiple regression examined the moderating effect of campus integration (5-item Purdue Gallup Index, e.g., My professors care about me as a person) on the association between resilience (6-item BRS) and anxiety (7-item GAD-7). Demographic variables were included as covariates. Post-hoc probing of the interaction and simple slopes were performed using methods outlined by Aiken and West. Results: The main effect for resilience was negatively associated with anxiety ($\beta = -.42, p < .001$), however there was a non-significant association between campus integration and anxiety ($\beta = -.05, p > .05$). Analysis revealed a significant interaction effect ($\beta = -.09, p < .05$), such that campus integration moderated the relationship between resilience and anxiety. The final model accounted for 21% of the variance in anxiety ($F = 10.48, p < .001$). Analysis of simple slopes indicated that greater resilience was associated with lower anxiety more so for participants with higher versus lower campus integration. Conclusions: Given the vulnerability of underrepresented minority students on university campuses, future research should explore whether enhancing psychological resilience and campus integration fosters mental health and reduces generalized anxiety.

Board 332

Cognitions and Behaviors Related to Risk for Alcohol-exposed Pregnancies among Young Adult Women

Erika L. Thompson, Dana M. Litt, Stacey B. Griner, Melissa A. Lewis

Purpose: Alcohol-exposed pregnancies are a significant public health issue due to the risk of fetal alcohol spectrum disorder and other neurobehavioral changes. Prevention of alcohol-exposed pregnancies requires two behaviors: effective contraceptive use and reduction of alcohol use. The purpose of this study is to assess alcohol and sex-related cognitions and behaviors, including alcohol-related sexual expectancies, descriptive norms, and protective behavioral strategies associated with women's risk for an alcohol-exposed pregnancy. Methods: Young adults (18-20 year old) were recruited nationally using online, in-print, and in-person recruitment strategies ($N = 1,144$). The sample was subset to women who were capable of pregnancy and sexually active ($n = 422$). The outcome was risk of alcohol-exposed pregnancy as determined by contraceptive status and heavy episodic drinking. Covariates included relationship status, past week alcohol use, alcohol-related sexual expectancies (sexual enhancement, risk-taking, and disinhibition), protective behavioral strategies (condom-related, non-condom-related safer sex, and drinking), and descriptive norms (condom use, birth control, and alcohol use during sexual encounter). SAS version 9.4 was used to estimate logistic regression models. Results: Most women (94%) reported heavy episodic drinking in the past year, and type of contraception used varied, with most women using a short-acting

reversible method (e.g., pill). Alcohol-related sexual expectancies related to enhancement were significantly associated with increased odds of alcohol-exposed pregnancy risk ($OR = 1.79$, 95%CI: 1.11, 2.89). In contrast, women who reported the use of more non-condom related protective behavioral strategies were at decreased odds of alcohol-exposed pregnancy risk. Conclusions: Based on these findings, future interventions to reduce the risk of alcohol-exposed pregnancies should consider alcohol-related sexual expectancies and safer sex protective behavioral strategies as leverage points for young adult women.

Board 333

Relationships between Self-regulation and Use of Parenting Strategies among Mexican-heritage Mothers

Tyler Prochnow, Megan McClendon, Joseph Sharkey, M. Renée Umstatt Meyer

Purpose: The purpose of this study was to understand support behaviors that can promote healthy eating and active living for Mexican-heritage mothers. Specifically, we analyzed the relationship between maternal self-regulation (the capacity to plan, guide, and monitor one's behavior flexibly in the face of changing circumstances) and use of parenting strategies among mothers residing along the Texas-Mexico border. **Methods:** Mothers ($n = 116$) were recruited from three geographic regions within Hidalgo County, Texas. A 21-item survey was administered to measure self-regulation through goal setting and limit setting. The "Parenting Strategies for Eating and Activity Scale" (PEAS) was used to measure parenting strategies such as limit setting, discipline, monitoring, and

control. Pearson correlations and multiple linear regression analyses were used to identify relationships between self-regulation (goal setting and impulse control) and parenting strategies. Sociodemographic characteristics of mothers are also reported. **Results:** Mothers were on average 36 years old ($SD = 7.44$), were married (82%), identified as Mexican (90%), and had less than 9 years of education (68%). Pearson correlations revealed goal setting to be positively associated with limit setting ($r = .246$, $p < .001$), control ($r = .203$, $p = .03$), and monitoring ($r = .336$, $p < .001$). Regression analyses revealed limit setting ($\beta = .246$, $p < .001$), control ($\beta = .203$, $p = .03$), and monitoring ($\beta = .336$, $p < .001$) as parenting strategies that were associated with goal setting ($R^2 = 0.12$). **Conclusions:** Findings suggest that programs include goal setting to facilitate use of parenting strategies to support healthy behaviors that promote nutrition, physical activity, and decreased sedentary behaviors. Focusing on improving goal setting, versus parenting strategies, for mothers could be more useful, since changing parenting strategies could be negatively received in certain cultural contexts. Emphasizing malleable behaviors rather than deficits in parenting strategies could allow for higher receptivity of behaviors that can promote health in a family context.

Board 334

A Descriptive Analysis of the Frequencies of Characteristics Associated with Opioid Misuse and Urine Drug Testing among Nevada Medicaid Beneficiaries



**American Academy of Health Behavior
Poster Session
Tuesday, March 10, 2020**

Sarah Hartzell, Michelle Keller, Kirtan Patel,
Yan Liu, Sarah Friedman

Purpose: The national opioid epidemic has resulted in federal and state guidelines and many recommend providers use routine urine drug testing (UDT) to identify opioid misuse. This study describes frequencies of patient-level characteristics associated with opioid misuse (i.e., those with greatest potential to benefit from UDT) and UDT use among those prescribed opioids. **Methods:** This study used Nevada Medicaid claims data for adults from January 2017 to April 2018 for three cohorts: 1) Opioid-naïve (no opioid prescriptions in the prior 90 days, $n = 11,326$); 2) Opioid-naïve with a second prescription (another prescription within 30 days of end of first days' supply, $n = 8,605$); and 3) Individuals with long-term opioid use (120 days' supply within 6 months, $n = 17,456$). For all cohorts, predictors of opioid misuse include nicotine dependence, alcohol-related disorders, other substance disorders, and mental health disorders. For Cohort 3, two predictors (prescriptions from multiple providers and early refills) were created. We counted UDT within 15 days prior to the first prescription for Cohorts 1 and 2, and UDT between 60 and 183 days after the first prescription for Cohort 3. **Results:** In all cohorts, about two-thirds were female and the majority were over 35 years old. Substantial proportions of each cohort had one or more conditions shown in the literature as associated with opioid misuse (Cohort 1: 13.3%, Cohort 2: 14.6%, Cohort 3: 14.9%). Among Cohort 3, 29.5% had multiple providers and 22.9% had early refills. Rates of UDT were low in all cohorts (Cohort 1: 2.5%, Cohort 2: 3.5%, and Cohort 3: 9.9%). **Conclusions:** A very small proportion of

Nevada Medicaid enrollees received a UDT. Relative to the observed rates of conditions associated with opioid misuse in the study sample, the UDT rates are surprisingly low. These findings suggest a need to increase UDT guideline adherence among providers, particularly among patients at risk for opioid misuse.

Board 335

Family-engaged Physical Activity of Mexican-heritage Children Residing along the Texas-Mexico Border: Is There a Relationship between Family-engaged Physical Activity and a Child's Physical Activity Participation?

Haley Delgado, M. Renée Umstadd Meyer,
Kelly Ylitalo, Joseph Sharkey

Purpose: The purpose of this study was to examine the relationship between family-engaged physical activity and children's physical activity among Mexican-heritage populations. **Methods:** Promotoras (community health workers trained in research methods) administered surveys to mothers ($n = 346$) that resided in south Texas-Mexico border colonias. The survey included questions about frequency of participation in family-engaged physical activity and participation of children in physical activity (weekly frequency of physical activities outdoors, number of hours spent in physical activity in a week, and number of hours spent in physical activity during the weekend). Mothers' sociodemographic information was collected and described. Chi-square tests and logistic regression analyses were used to examine the

relationship between family-engaged physical activity frequency and child physical activity frequency. Results: Mothers ($n = 346$) were on average 35 years old ($SD = 10.0$), married (65.32%), and born in Mexico (81.5%). Children ($n = 346$) were either 8 ($n = 117$), 9 ($n = 110$), or 10 ($n = 119$) years old. There was a statistically significant relationship between the frequency of family-engaged physical activity bouts and the number of days a child played outside during the week ($p < .001$), but there was no significant relationship between family-engaged physical activity frequency and the number of hours of weekday outdoor physical activity or the number of hours of weekend outdoor physical activity. Children from families that engaged in physical activity more frequently were almost 4 times as likely to participate in physical activity independently ($OR = 3.99$; 95%CI = 1.71, 9.34) when compared to children from families who participated in physical activity less frequently. Conclusions: Understanding the relationship between family physical activity and child physical activity may facilitate maintained physical activity among programs. Family-focused programs should take the effects of family physical activity on child physical activity levels into consideration. More work is needed to understand the impact, feasibility, and sustainability of family-focused physical activity interventions within diverse cultural contexts.

Board 336

Health Behaviors among Young Adult Black Women Associated with Profiles of

Social Adversity: Implications for Health Behavior Interventions

Jewel Scott, Susan Silva, Leigh Ann Simmons

Purpose: Black females experience disparate rates of hypertension and earlier decline in cardiovascular health. Social stressors may contribute to these disparities, however research has been based on the premise that subpopulations (e.g., blacks, women) are heterogeneous without considering how different patterns of adversity may affect health. This study aimed to identify latent class subgroups of social adversity for young adult black females and determine whether the adversity subgroups differ on cardiovascular health behaviors. Methods: We analyzed data from 1,679 black females, ages 24-32, who completed the early adulthood assessment of the National Longitudinal Adolescent to Adult Health Study. Eight social adversities were assessed: social isolation, discrimination, subjective social status, food insecurity, housing insecurity, community violence, direct interpersonal violence, and perceived stress. Latent class analysis was used to identify subgroups of social adversity. Rao-Scott chi-squared tests were used to test for subgroup differences in health behaviors, namely tobacco use, physical activity, fast food, and sugary beverage intake. Results: We identified three subgroups of social adversity: (1) high adversity with perceived stress ($n = 325$, 19.4%), (2) high exposure to violence ($n = 299$, 17.8%), and (3) less adversity ($n = 1055$, 62.8%). Tobacco use was greater in the high adversity with perceived stress and high exposure to violence subgroups relative to the low

adversity subgroup (both $p < 0.03$). However, those with high adversity with perceived stress were more likely to be physically active at least five times/week compared to those in the other subgroups (both $p < 0.01$). The adversity subgroups did not significantly differ with regard to the other health behaviors. Conclusions: Health behaviors associated with cardiovascular risk may represent methods of coping that vary depending on type of stressor experienced. Understanding profiles of social adversity among black females and their association with specific health behaviors could provide insight into opportunities for tailored behavioral interventions to mitigate cardiovascular health inequities.

Board 338

Are Intrapersonal Beliefs or Interpersonal Relationships more Impactful on Drinking Behaviors? Examining the Influence of Religiosity & Peer Heavy Episodic Drinking On Typical Alcohol Consumption Behaviors among Adolescents in the United States

Anas K. Nabil, Alex M. Russell, Adam E. Barry

Purpose: Studies have consistently demonstrated a negative association between religiosity/spirituality (R/S) and alcohol consumption among adolescents. While R/S represents a protective factor for drinking, heavy episodic drinking (HED) among peers has been identified as a risk-factor for alcohol consumption. In other words, persons who have peers that engage in HED will drink in greater quantities and more frequently. This

investigation assesses whether personal faith (R/S) or peer behavior explains a larger portion of the variance in personal alcohol consumption among youth, after accounting for other important covariates (e.g., age, gender, and education). **Methods:** This investigation analyzed a nationally representative data set ($N = 3,398$; Add Health Wave 3 - UNC-Chapel Hill). Two primary predictors of interest were evaluated: R/S and peer HED. A hierarchical regression analysis assessed the collective contribution of each independent variable on the typical alcohol use of each respondent. **Results:** The base model, comprised only of the demographic variables age, gender, and education, was statistically significant ($p < .001$) and accounted for 8.9% of the variance for respondents' typical alcohol use. Model 2 assessed the added predictive value of peer HED, above and beyond the covariates. This model accounted for 26.6% of variance in respondents' typical alcohol use, approximately 17.7% of the variance in typical alcohol use over and above age, gender, and education. The final model was to determine the independent contribution of R/S, which resulted in a modest increase (1.5%). Specifically, Model 3 accounted for 28.1% of the variance in typical alcohol use. **Discussion:** Though both R/S and peer behaviors have been identified as important factors influencing individual drinking behaviors, this investigation contends peer behavior has a far greater impact than R/S. Consequently, we suggest that future alcohol prevention programming address and leverage the influence of peer behaviors, as the interpersonal nature of adolescent drinking behaviors is of paramount importance.

Board 339

The Role of Sleep Duration in Changing Narratives of Multiple Suicide Attempts among Adolescents

Yunyu Xiao, Jon Agle

Purpose: Suicide attempts and suicide-related mortality have increased among adolescents in recent years. These trends have implications for etiology and prevention of suicide and suggest the need to study emerging risk factors, including sleep duration. This study estimated the trends of association between sleep duration and suicide attempts among U.S. nationally representative samples of high school-attending adolescents from 1991 to 2017. **Methods:** Data were drawn from a sample of 68,301 adolescents in 9th-12th grades from 1991 to 2018 National Youth Risk Behaviour Surveys. Suicide attempts measured the number of attempts (0, 1, 2-3, 4 or more times) in the past year. Sleep duration was categorized as short (< 6 hours), normal (6-8 hours), and long (> 8 hours). Multinomial logistic regression analyses were used to assess trends of association between sleep and suicide attempts, controlling for depressive symptoms, health behaviors, and bullying. Survey year was treated as a continuous variable and was used to examine the linear trend. Clustering effect and sampling weights were further adjusted to ensure that the sample was nationally representative and the statistical inferences were appropriate. **Results:** Over time, short sleep duration was consistently associated with greater risks of 1 (Relative Risk Ratio [RRRadj.] = 2.72), 2-3 (RRRadj = 2.93), and

4+ suicide attempts (RRRadj = 5.73). Long sleep duration was also found to increase the risk of 4+ attempts (RRRadj = 2.52). Such associations have been strengthened over time. Trends were generally similar by race/ethnicity; racial/ethnic minorities had greater risks of suicide attempts compared to white adolescents. Females were more likely to have 1 (RRRadj = 1.45) and 2-3 (RRRadj = 1.88) attempts, but less likely to have 4+ attempts (RRRadj = 0.71) than males. **Conclusions:** Sleep quality is complex, and this study suggests variation above or below recommended sleep duration is associated with emerging changes in incidence of suicide attempts.

Board 340

Improving Access to Treatment for Ohioans with Opioid Use Disorder

Nicole Kinzeler, Ellen Augspurger, Valerie Kapp, Justine Gurley, Kraig Knudsen

Purpose: In 2017, Ohio had the second highest rate of drug overdose deaths involving opioids in the United States. Published data from the 2016 National Survey on Drug Use and Mental Health (NSDUH) demonstrated that 40,000 Ohioans reported heroin use in the past year and 442,000 reported misuse of prescription pain relievers, with approximately 221,000 needing but not receiving treatment for illicit drug use including opioids. The Medication Assisted Treatment – Prescription Drug and Opioid Addiction (MAT-PDOA) project was awarded to the Ohio Department of Mental Health and Addiction Services (OhioMHAS) from the Substance Abuse and Mental Health



Services Administration (SAMHSA) to expand the use of medication-assisted treatment (MAT) and reduce the number of opioid overdose deaths in Ohio. Methods: Nine Alcohol, Drug Addiction, and Mental Health Services (ADAMHS) Boards encompassing 17 Ohio counties received MAT-PDOA funding to implement treatment and recovery services within their local agencies for persons with an opioid use disorder (OUD). Demographics and outcome measures including substance use and mental health indicators were collected at intake and 6-month follow-up using SAMHSA's Government Performance and Results Act (GPRA) tool. Results: Of the 1,137 Ohioans served by MAT-PDOA, 50.7% were female, 88.3% were Caucasian, and the mean age was 34.4 years. Paired samples t-tests indicated significant reductions in 30 day alcohol, opioid, and other illegal drug use ($p < .001$) and improvements in mental health outcomes ($p < .05$) from baseline to follow-up. Additionally, a greater percentage of participants were employed at follow-up (49.8%) compared to baseline (31.8%) ($p < .05$); however, there was not a significant change in housing status. Conclusions: The MAT-PDOA project has successfully expanded MAT services and narrowed the treatment gap for Ohioans with an OUD. The positive outcomes associated with this project will hopefully encourage lawmakers to continue funding treatment and recovery services for individuals with substance use disorder.

Board 341

Factors Associated with Past Year Emergency Room Visits among African

American and Hispanic Men with Chronic Conditions

Ledric Sherman, R. Kirby Goidel, Ashley Merianos, E. Melinda Mahabee-Gittens, Matthew Smith

Purpose: Males traditionally underutilize preventive healthcare services and routine medical visits available by primary care providers. Health resource utilization is especially limited among racial/ethnic minority men, who often prolong or delay preventive healthcare visits or use emergency rooms (ER) as primary care. This study identified factors associated with ER utilization within the past year among African American and Hispanic men age 40 years and older with one or more chronic conditions. Data were analyzed from a national sample of 1,904 racial/ethnic minority males using an Internet-delivered questionnaire. A binary logistic regression model was fitted to assess factors associated with past year ER visits. On average, participants were age 56.51 (± 10.03) years and self-reported 4.01 (± 2.98) chronic conditions of a list of 19 conditions. Approximately 57% were African American, 40.9% were Hispanic, and 44.4% reported visiting an ER in the past year. Males who were African American ($OR = 1.28$, $p = 0.019$), as well as those who had more chronic conditions ($OR = 1.06$, $p < 0.001$), more severe sleep problems ($OR = 1.04$, $p = 0.038$), and higher levels of frustrations with their healthcare ($OR = 1.12$, $p < 0.001$) were significantly more likely to visit the ER in the past year. Relative to non-smokers, men who smoked cigarettes ($OR = 1.52$, $p = 0.003$), were dual tobacco users (i.e., smoked cigarettes and one other nicotine product; OR

= 1.44, $p = 0.046$), and were polytobacco users (i.e., smoked cigarettes and at least two other nicotine products; $OR = 3.21$, $p < 0.001$) were significantly more likely to visit an ER in the past year. Findings suggest reasons for ER visits are influenced by complex disease profiles, diminished sleep quality, negative healthcare perceptions, and smoking behaviors. Efforts are needed to assess ways to facilitate preventive healthcare utilization among racial/ethnic minority men to potentially offset preventable ER visits while reducing frustrations associated with healthcare interactions. Efforts focusing on smoking cessation and disease self-management education may help decrease ER utilization.

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Patient-centered Medical Home Enrollment and Associated Substance Use Disorder among U.S. Adolescents: A Propensity-score Analysis

Tzung-Shiang Ou, Hsien-Chang Lin

Purpose: Substance use/misuse and substance use disorder (SUD) have been serious public health concerns among U.S. adolescents. Primary care providers could play an important role in substance use/misuse prevention and treatment. Patient-centered medical home (PCMH) is an innovative model that aims to improve healthcare quality and help patients meet healthcare needs by transforming primary care. However, it is unclear if PCMH enrollment could be linked to SUD. This

study examined the association between PCMH enrollment and SUD among U.S. adolescents. **Methods:** This was a retrospective cross-sectional study. A total of 10,994 adolescents were extracted from the 2017 National Survey on Children's Health. Propensity-score analysis using 1:1 nearest neighbor matching was conducted to reduce potential selection bias between participants who enrolled and did not enroll in a PCMH. A weighted logistic regression was conducted to examine the association between PCMH enrollment and current SUD diagnosis on the matched sample, adjusting for mental health conditions and other covariates guided by the Andersen Model of Healthcare Utilization. **Results:** A balanced matched sample containing 9,252 participants was achieved (imbalance test: Chi-square = 7.16, $df = 6$, $p = 0.306$), suggesting that potential selection bias was reduced. Results from the weighted logistic regression on the matched sample showed that adolescents who enrolled in a PCMH, compared to those who did not, were less likely to report a current SUD diagnosis ($OR = 0.30$, $p < 0.05$), while other mental health conditions were adjusted. **Conclusions:** This study concluded that PCMH enrollment was associated with a lower likelihood of having SUD among U.S. adolescents. This finding adds to the evidence that integrating patient-centered primary care services with SUD prevention and treatment in an innovative medical home setting may be an effective strategy in reducing SUD among adolescents. Policies that promote PCMH enrollment may have a secondary effect on preventing adolescent substance use.



Board 343

Pregnancy Intendedness and Prenatal LARC Counseling Predict Postpartum Contraceptive Use

Karina Shreffler, Stacy Tiemeyer, Jameca Price, Karen Gold, Lance Frye

Purpose: Promoting postpartum LARC (long-acting reversible contraceptive) insertion has been identified as an effective and timely strategy to reduce inadequate birth spacing and unintended pregnancy, but prenatal facilities differ considerably on practices regarding postpartum LARC insertion and communication with patients. Even within the same prenatal clinic, uptake of postpartum contraception can differ by patient characteristics. Yet it is unclear how characteristics of a prior pregnancy predict postpartum contraceptive use such as LARC insertion. This study was conducted to prospectively examine how pregnancy intendedness and provider LARC counseling during pregnancy are associated with lack of contraceptive use at six months post-birth (e.g., indicating risk for a short inter-pregnancy interval (IPI)). **Methods:** Logistic regression models were used to examine short IPI risk among a sample of 121 low-income and racially/ethnically diverse women recruited from two metropolitan perinatal clinics in Tulsa, OK. **Results:** Women who reported that they were trying to get pregnant or ambivalent about getting pregnant had significantly lower odds of using contraception at six months postpartum than those who had unintended pregnancies. Having providers who discussed LARC options significantly increased the odds of contraceptive uptake among those who were trying or ambivalent about their pregnancies.

Conclusions: Intentions of a current pregnancy and provider contraceptive counseling matter for postpartum contraceptive use and the associated risk for a short IPI. Provider contraceptive counseling that accounts for the intendedness of a current pregnancy may offer a more targeted approach to preventing a short interval subsequent pregnancy.

Board 344

Mindfulness Moderates the Link between Discrimination and Stress in Homeless Adults

Yashwant Harkara, Lorraine Reitzel, Darla Kendzor, Ann Chen, Michael Businelle

Purpose: Homeless adults are highly vulnerable to discrimination and other daily stressors linked to a poorer quality of life. Mindfulness is a modifiable trait characterized by self-awareness, acceptance, and internal focus, which achieves stress reduction. It is understood that discrimination leads to greater stress; however, little is known about the role of mindfulness in discrimination-based stress. **Methods:** A convenience sample of sheltered homeless individuals in Dallas, Texas who were > 18 years of age, literate at a 7th grade level, and English speakers served as the participants in this study. Participants self-reported discrimination via the Detroit Area Study Assessment of Day-to-Day Discrimination, stress via the Urban Life Stress Scale, and trait mindfulness via the Mindful Attention Awareness Scale. The relationship between discrimination and stress, moderated by mindfulness, was evaluated using a linear

regression adjusted for age, sex, marital status, education, income, employment status, and length of homelessness over the lifetime. Results: Participants ($N = 219$) were 45 years of age on average and were mostly non-white/minoritized (70%) and male (74%). Discrimination was positively associated with stress in adjusted analyses ($B = .672$, $SE = .074$, $p < .0001$). The interaction effect between discrimination and mindfulness on stress was significant ($p < .05$). Individuals with high mindfulness experienced the least stress from discrimination experiences, followed by those with average and then low mindfulness. This pattern was particularly pronounced at low to moderate levels of discrimination. Conclusions: Results suggest that mindfulness may confer some resiliency benefits on stress for homeless individuals experiencing discrimination; however, the strongest benefit may be seen when discrimination experiences are moderate to low. Findings suggest the utility of examining the effectiveness of mindfulness-based interventions on stress among homeless adults. Although systemic changes are needed to address the discrimination experienced by homeless individuals, increasing coping abilities through mindfulness work may lead to better quality of life in the interim.

Board 345

Evaluation of a Brief, Tailored Skin Cancer Risk Assessment and Referral Intervention for Community-based Health Educators

Julie W. Merten, Julie Schafer, Jean Newell

Purpose: Skin cancer rates are rising and earlier detection through screening often leads to better chances of recovery and reduced expenses. Dermatologists conduct the majority of skin cancer screenings in the United States, but do not have the capacity to conduct routine total body skin examinations on all U.S. adults. Health educators in community-based health centers are well-situated to assess skin cancer risk, deliver tailored health information, and refer high-risk patients to a healthcare provider for a total body skin examination. This study describes the evaluation of a brief, tailored skin cancer risk assessment and referral intervention for community-based health educators. Methods: The training program for community-based health educators was developed as part of a pilot feasibility study to develop a brief, tailored skin cancer risk assessment and referral intervention. Community-based health educators were trained in interactive sessions that included role-playing with different levels of motivation and skin cancer risk. A training guide, tailored health information, and resources were provided. Knowledge, attitudes, and efficacy were assessed before and after training. Results: Participating community-based health educators showed overall improvements of 20% in skin cancer risk knowledge, 45% improvement in positive attitudes toward skin cancer risk assessment and referral, and 85% increase in efficacy to intervene with patients. Community-based health educators that completed the training were able to screen their patients for skin cancer risk and refer high-risk patients for a skin cancer screening



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with a healthcare provider. Conclusions:
Community-based health educators can be

trained to deliver a brief, tailored skin cancer
risk assessment and referral intervention.