

Board 301

TRAJECTORIES OF DEPRESSIVE SYMPTOMS AND COVID-SPECIFIC WORRIES IN COLLEGE STUDENTS WITH FINANCIAL NEED

Angela Chow, Shuhan Yuan, Vincent Isom, & Hsien-Chang Lin

Purpose: COVID-19 has become a major disruption to colleges and universities. The purpose of this study was to assess the longitudinal changes in depressive symptoms and worries in college students with financial need.

Methods: Survey were collected from 313 undergraduate students in a need-based scholarship program from a Midwestern university at three time-points (September 2020, January 2021, and May 2021). Depressive symptoms were measured by the Center for Epidemiologic Studies Depression Scale (CES-D, e.g., "I felt sad"). COVID-specific worries were measured by 9 items assessing the intensity of concern related to the pandemic (e.g., "Worry about others not wearing a mask"). Bivariate latent growth curve modelling was employed to estimate the trajectories of both depressive symptoms and COVID-specific worries simultaneously.

Results: Fit statistics of the bivariate latent growth curve model indicated adequate fit, chi-square(8) = 17.1, p < .05, CFI = 0.93, RMSEA = 0.06. The mean at baseline (i.e., intercept) for depressive symptoms is 20.78 (possible range = 0 to 60) and that for COVID-related worries is 3.01 (possible range = 1 to 5). Overtime, depressive symptoms increased (slope = 0.23, p < 0.001) but COVID-specific worries decreased (slope = -0.04, p < 0.001). The intercepts of the two trajectories were correlated (correlation = 0.66, p < 0.001) but their slopes were not significantly correlated.

Conclusions: In line with the timing of vaccine availability, COVID-specific worries decreased from 2020 fall to 2021 summer. However, depressive symptoms continued to increase over time. Also, it should be noted that depressive symptoms at all waves were consistently higher than the CES-D cut-off (cut-off score = 16). Research efforts to identify and address issues underpinning this increasing depression symptom trend in students with financial needs are warranted.

Board 302

TEACHERS' SCHOOL GARDEN PERCEPTIONS AND USE RELATED TO ADMINISTRATOR SUPPORT

Anna Price & Kristin Rainville

Background: Outdoor educational experiences, such as school garden programming, have been associated with mental health, physical health, and educational benefits for children; however, school gardens are often under-utilized by teachers in schools. Purpose and Methods: Using a brief, online questionnaire, we examined if public school elementary teachers' (n=143) perceptions of principal support for school garden programming was related to their: 1) perceptions about the value of school gardens for education (School Garden Value, α = .952), 2) perceptions about the value of outdoor educational experiences (Outdoor Education Value, α = .856), 3) perceived confidence in their ability to use school gardens for educational purposes (School Garden Confidence, α =.945), and 4) use of school gardens in the prior six months.



Results: Teachers who perceived their principal as supportive of garden-based learning had higher scores for Outdoor Education Value (p=.019), School Garden Value (p=.002), and School Garden Confidence (p=.001). School Garden Value (p<.001) and School Garden Confidence (p<.001) scores were also higher among teachers reporting school garden use. Conclusion: The findings highlight the importance of administrator buy-in and support for school garden use in schools.

Board 303

ASSOCIATION OF CANCER INFORMATION SEEKING BEHAVIOR WITH CIGARETTE SMOKING AND E-CIGARETTE USE AMONG U.S. ADULTS. IS EDUCATION LEVEL A MATTER?

Beomyoung Cho & Sukwon Lee

Purpose: This study aims to examine the association of cancer information seeking behavior with cigarette smoking and e-cigarette use by education level among U.S. adults.

Methods: A pooled data of the Health Information National Trends Survey 5, Cycles 1-4 (2017-2020) was used. Individuals who have looked for cancer information from any source were considered cancer information seekers. Individuals who have smoked at least 100 cigarettes in their lifetime and reported currently smoke cigarettes every day or some days were considered current cigarette smokers.

Individuals who ever used e-cigarette at least one time and reported currently use e-cigarette every day or some days were considered current e-cigarette users. We conducted weighted multiple logistic regression analysis to examine the association of cancer information seeking behavior with the current cigarette smoking and e-cigarette use, adjusting for sex, race/ethnicity, age, obese status, depressive symptoms, cancer diagnosis history, metropolitan status, and survey year. Regression models were stratified by education level. Individuals in 18-25 years old were excluded as they have not likely completed their education.

Results: A final analytic sample included 12,430 adults. Cancer information seekers had lower odds of cigarette smoking than non-seekers, but this was significant in only college or higher education group (Adjusted odds ratio [AOR] = 0.77, 95% confidence interval [CI] = 0.60-0.98). In contrast, cancer information seekers had higher odds of e-cigarette use than non-seekers, but this was significant in only less than college education group (AOR=2.12, 95% CI = 1.20-3.76).

Conclusions: Cancer information seeking behavior might reduce cigarette smoking, but this was not observed in less educated individuals. Despite the unproven impact of e-cigarette use on cancer, cancer information seeking behavior might positively influence e-cigarette use in less educated individuals. A proper dissemination of proven health information regarding cigarette smoking and e-cigarette use is recommended for less educated individuals.

Board 304

SYSTEMATIC REVIEW OF ELECTRONIC BEHAVIORAL OBESITY PREVENTION INTERVENTIONS TARGETING MEN



Adam P. Knowlden, A. Wilkerson, & K. Dunlap

Purpose. Although more than 71% of men in the United States are overweight or obesity, a recent review found men comprised only 27% of enrollment in 244 behavioral weight loss randomized controlled trials. Men are less likely than women to participate in face-to-face weight loss programs and instead prefer incremental, self-guided. Therefore, electronic interventions have potential to reach overweight/obese men. The purpose of this study was to systematically review the efficacy of electronically-delivered behavioral interventions targeting overweight and obese men.

Methods. Inclusion criteria for the review were: interventions that used controlled trial designs, targeted overweight/obese men, and incorporated at least one electronic modality. Literature searches were delimited to peer-reviewed articles, published between January 2000 and October 2021, in the English language, and indexed in MEDLINE, CENTRAL, and/or Web of Science electronic databases. Interventions satisfying inclusion criteria were critiqued for methodological quality.

Results. Eleven studies met the inclusion criteria. Mean quality assessment score of the interventions was 7.5 out of 10. Five studies applied intention-to-treat analysis; of these, three showed significant findings on at least one primary variable. Of those using only per-protocol analysis (n=3), two showed significant findings on at least one primary variable. All but one intervention applied a randomized controlled trial design. Most interventions were based on behavioral theory (n=7), but only three measured constructs from the applied theories. Recruitment occurred at universities (n=1), work sites (n=4), communities (n=6). Duration of the interventions was 10 to 52 weeks with attrition rates ranging from 14% to 51%. Five interventions incorporated at least one face-to-face component, with only three being exclusively delivered electronically. None of the interventions attempted to modify sedentary behavior or sleep duration. Nearly all (n=8) applied process evaluation.

Conclusions. Electronic interventions for treating overweight/obesity in men show promise. Additional research is required to evaluate their full potential.

Board 305

BEHAVIORAL RISK FACTOR PREDICTORS OF SHORT SLEEP DURATION IN MEN: A SOCIO-ECOLOGICAL MODEL APPROACH

Adam P. Knowlden

Purpose. Over 70% of men in the United States are overweight or obese. While multiple biological, behavioral, and social factors are hypothesized predictors of obesity, less is known about the role short sleep plays in perpetuating weight gain in men. The social-ecological model is a robust, systems framework that seeks to model upstream and downstream environmental and behavioral factors and may assist in addressing these issues. The purpose of this study was to model social-ecological-based predictors of short sleep in men. Methods. A cross-sectional sample of men were recruited to participate in this study. Participants were grouped into to two sleep categories: normal sleepers (7-9 hours) and short sleepers (4-6 hours) and two body mass index (BMI) weight categories: normal (BMI=18.5 to 24.9) and overweight/obese.



(BMI=25+). Previously validated questionnaires were completed with each questionnaire representing one level of the five primary levels encapsulated by the model: Policy level: Barriers to Care Questionnaire; Community level: Modified Community Noise and Sleep Disturbance Survey; Organizational level: Modified Job Satisfaction Survey; Interpersonal level: Healthy Literacy Questionnaire; Pittsburg Sleep Quality Index, Epworth Sleepiness Scale; Intrapersonal level: Self-efficacy for Sleep Scale, Dysfunctional Beliefs/Attitudes about Sleep Scale. Results. Of the sample (n=478), 60.2% identified as white, 37.6% identified as African American, and 2.2% identified as Asian. Most were short sleepers (63.4%) and fell into the overweight/obesity category (72.3%). The modeled layers of the ecological model found the organizational (β =.194), interpersonal (β =.265), and intrapersonal (β =.303) levels were significant predictors of sleep (p<.05), while the policy (β =.133), interpersonal (β =.251), and intrapersonal (β =.406) levels were significant predictors of body mass index (p<.01). Conclusions. The social-ecological model predicts short sleep in men. When mediated by BMI, the social-ecological model was more predictive of short sleep, though the increase in effect size was small.

Board 306

MODELING SHORT SLEEP AND INSOMNIA AS INDEPENDENT PREDICTORS OF DIABETES IN A NATIONALLY REPRESENTATIVE SAMPLE

Adam P. Knowlden & Michael Grander

Purpose. Epidemiologically, short sleep's (<6 hours) association with negative cardiometabolic health outcomes continues to mount; yet, the complex relationship between sleep and health is still not well-understood. Historically, short sleep and insomnia have been analyzed as a singular construct; however, clinically, they are unique sleep disorders. The purpose of this study was to determine if short sleep and insomnia were independent constructs; and to evaluate whether short sleep and insomnia predicted diabetes.

Methods. Analyses were based on the 2015-2016 National Health and Nutrition Examination Survey (NHANES). NHANES applies multi-stage probability sampling to acquire a representative sample of non-institutionalized U.S. adults. Data related to short (<6), normal (7-8), and long (9+) sleep duration, insomnia (present: mild, moderate, severe), and diabetes (present: history of diabetes/fasting blood sugar of 130+) were extracted for analysis and modeled using logistic regression. Age, sex, and obesity (body mass index, 30.0+) were entered as covariates into the models. Results. Of the sample, 0.08% were normal sleepers with insomnia; 0.21% were short sleepers with insomnia; and, 0.59% had insomnia with short sleep. Short sleep (OR=1.40 [95% Cl=1.15, 1.70]; p=.001), insomnia (OR=1.45 [95% Cl=1.17, 1.81]; p=.001), short sleepers with (OR=2.01 [95% Cl=1.54, 2.63]; p<.001) and without (OR=1.48 [95% Cl=1.20, 1.82]; p<.001) insomnia, as well as normal sleepers with insomnia (OR=1.68 [95% Cl=1.15, 2.43]; p=.007) each independently predicted diabetes.

Conclusions. Findings from this study suggested short sleep and insomnia are independent constructs as well as independent significant predictors of diabetes. The final models found short sleep and insomnia neither mediated nor moderated one another, implying these two sleep outcomes are not additive in nature, but are instead separate health problems. The



distinction between short sleep and insomnia as predictors of diabetes may have important epidemiological and clinical implications.

Board 307

ACCEPTABILITY, FEASIBILITY, AND APPROPRIATENESS OF PRENATAL CHLAMYDIA SCREENING GUIDELINES

Stacey B. Griner, Kaeli C. Johnson, Ashlyn Kinard, Meaghan Nelsen, Nolan Kline, & Erika L. Thompson

Background: Professional organizations have evidence-based guidelines recommending chlamydia screening during pregnancy to prevent adverse pregnancy and neonatal outcomes. Guideline adoption and implementation into clinical care can be influenced by perceived guideline characteristics such as acceptability and clarity. Little is known prenatal providers' perceptions of these guidelines; therefore, we assessed the acceptability, feasibility, and appropriacy of prenatal chlamydia screening guidelines.

Methods: We assessed provider (MD/DO; n=198) adoption of three prenatal chlamydia screening guidelines (American College of Obstetricians and Gynecologists (ACOG); U.S. Preventive Services Task Force; CDC). We assessed guideline feasibility though the Feasibility of Intervention Measure (FIM), acceptability using the Acceptability of Intervention Measure (AIM), and appropriateness using the Intervention Appropriateness Measure (IAM). Scales were four items each with Likert-style responses (strongly disagree-strongly agree; 1-5). We compared these scores by guideline source using a multiple logistic regression model. The model adjusted for guideline characteristics including clarity (1-10), relative advantage, complexity, observability, and trialability.

Findings: Most prenatal providers (70%) selected the ACOG guideline for adoption and there were no significant differences in AIM (mean=4.1; SD=.81), FIM (mean=4.2; SD=.75), and IAM (mean=4.4; SD=.67) by guideline source. The ACOG guideline was significantly clearer (mean=9.0) compared to USPSTF/CDC guidelines (mean=8.4; p=0.000). In the adjusted model, lower AIM (aOR:0.24, 95% CI 0.08-0.68) and lower guideline clarity (aOR:0.66, 95% CI 0.51-0.86), resulted in lower odds of selecting the ACOG guideline compared to other guidelines.

Implications: Overall, providers viewed prenatal chlamydia screening guidelines as feasible, acceptable, and appropriate for adoption into prenatal care. However, specific characteristics, such as acceptability and clarity differed by guideline source. Given this, understanding the guideline development process among organizations authoring guidelines may be beneficial to improve rates of adoption and implementation. Future studies may benefit from exploring guideline development, dissemination, and adoption utilizing implementation science approaches to improve STI screening during pregnancy.

Board 308

NOVEL APPROACH FOR ADDRESSING HPV VACCINE MISINFORMATION: ACCEPTABILITY OF SOCIAL MEDIA POP-UPS



Erika L. Thompson, Annalynn M. Galvin, Ashvita Garg, Jonathan D. Moore, & Dana M. Litt

Objective: Misinformation and disinformation have contributed to skepticism and hesitancy for vaccines. Social media companies have explored novel strategies to address misinformation online for users. For example, Facebook proposed that prior to proceeding to any link about vaccination, a pop-up will prompt the user to visit a reputable website on vaccine information. Given the dismal uptake of Human Papillomavirus (HPV) vaccination in the United States and controversy surrounding this particular vaccine, we explored the acceptability of a pop-up Facebook message for HPV vaccine information.

Methods: A national sample of U.S. adults (n=579) were surveyed from an online panel in 2019. The outcome was likelihood of clicking on a pop-up about HPV vaccination on social media – a mockup of this pop-up was provided. We examined correlates (i.e., demographics, attitudes, exposure to HPV vaccination on social media, perceived credibility, polarization of social media content, sharing information online) of likelihood of clicking using binary logistic regression in SAS 9.4.

Results: Overall, 50% of participants said they would click on the pop-up if presented. Most participants rated the pop-up messages as acceptable, useful, and factual. People were more likely to click on the pop-up if they believed HPV vaccination information online was credible (OR=1.77, 95%CI 1.32-2.38), had positive attitudes about social media pop-ups (OR=1.21, 95%CI 1.14-1.28), perceived seeing positive content on social media (OR=1.89, 95%CI 1.14-3.15), and previously shared HPV vaccine information online (OR=2.50, 95%CI 1.12-5.60).

Conclusions: In an effort to address misinformation on HPV vaccination on social media, adults find pop-ups on social media to be acceptable. However, groups who already have favorable attitudes on vaccines may be the most likely to proceed with using a pop-up. Efforts are needed to explore how to improve acceptability, intention, and behavior to ultimately impact HPV vaccination behavior.

Board 309

USING A TEXT AND CHAT HOTLINE TO PROVIDE MALTREATMENT-RELATED SUPPORT

Laura Schwab Reese, Michelle Fingerman, & Laurel Jacobs

Purpose: The purpose of this study was to develop and evaluate a practice model for providing text- and chat-based support related to child maltreatment.

Methods: We conducted a qualitative content analysis of 314 conversations from a text- and chat-hotline selected through stratified random sampling. After the first round of coding was complete, we compared the characteristics of the initial sample to all conversations. Then, we purposefully sampled additional conversations from underrepresented groups, including perpetrators, young people, and maltreated children. These results were used to inform a practice model for providing written maltreatment-related support.



Results: We identified six groups who seek support, as defined by their relationship to the maltreated child: family members, peers/friends, maltreated children (self), distressed children (self), other known adults, and persons unknown to the child. Many people used the hotline as a source of information for referral to CPS. Children often sought resources for coping with maltreatment or supporting a friend who was being maltreated.

Overall, the conversations progressed through five stages: introduction/clarification of hotline role, exploring the issue, problem-solving, working towards a resolution, and conclusion. Across these stages, crisis counselors used empathy/active listening to build rapport. In general, rapport development, especially validation, was more critical for conversations with young people, as they often had more difficulty sharing their experiences and trusting the crisis counselor to provide support than adults did. The resulting practice model emphasized balancing information and support while adapting the approach to the developmental and situational needs of the help-seeker.

Conclusions: Text- and chat-based hotlines are one way to reach young people and others who need child maltreatment-related support. In a recent survey of text- and chat-based users, 90% of chat-based and 50% of text-based hotline users reported that they would not call a phone hotline, suggesting that this service fills a critical gap.

Board 310

DOES RACE/ETHNICITY AND ACCULTURATION MATTER TO SCHOOL MEAL PARTICIPATION?

Lori A. Spruance & Tien Vo

Purpose: School meals provide an opportunity for adolescents to receive a healthy meal, race/ethnicity and acculturation may play a role participation. The purpose of this study was to assess the relationship between acculturation, race/ethnicity, and participation in school meals.

Methods: A national convenience sample of adolescents ages 11 to 14 was recruited to participate in a survey. Acculturation was defined through several measures: time spend in the US, generation American, and three subscales from the Multidimensional Acculturation Scale. Relationships between participation in school meals, race/ethnicity, acculturation, and other salient variables were analyzed.

Results: The sample included 616 adolescents (33.2% White, 21.7% Black, 16.4% Hispanic/Latinx, 13.7% multiple races). More than a quarter (26.2%) of participants indicated that they eat school lunch daily and 17.4% indicated they eat school breakfast daily. In a multivariable model, race/ethnicity, preference for school meals, taste, convenience, cost, and parent influence were all significantly related to daily participation in school lunch. Race/ethnicity, time lived outside of the US, healthiness of school meals, preference of school meals, taste, and cost were significantly related to daily school breakfast participation. Compared to Whites, all other races were less likely to participate in school lunch and breakfast.

Conclusions: School meals may cater to White culture and less appealing to students from different race/ethnicities. Child nutrition professionals could work with students from minoritized populations to understand their lack of participation, particularly because these students likely



have poorer diets compared to their White counterparts. Additional factors should be considered for increasing participation, thus potentially the dietary profile of students, including cost, taste, and perceived healthiness.

Board 311

"THE CHANCES ARE ZERO": CONTRACEPTION USE AND PERCEIVED SUSCEPTIBILITY TO PREGNANCY AMONG WOMEN EXPERIENCING HOMELESSNESS

Annalynn M. Galvin, Ashvita Garg, Stacey B. Griner, Aneliese K. Diener, Idara Akpan, & Erika L. Thompson

Purpose: Women experiencing homelessness are at higher risk of unintended pregnancy than women stably housed. While contraception may reduce unintended pregnancy rates, women experiencing homelessness also have low rates of effective contraception use. In addition to access and affordability, how women perceive their susceptibility to pregnancy may contribute to health behavior, including contraceptive use. This study aimed to explore how women experiencing homelessness perceive their susceptibility to pregnancy with and without contraception from a qualitative, emic perspective.

Methods: Semi-structured interviews (n=19) were conducted from December 2019 - October 2020 among pregnancy-capable (i.e., not sterilized) women, 18-45 years of age, experiencing homelessness, and English-speaking. Interview questions included perceived susceptibility to pregnancy on and off contraception, attitudes toward pregnancy, and pregnancy intention. Interviews were audio-transcribed and coded to consensus using a seven-step coding process. Themes were identified via thematic and framework analysis, stratifying participants by pregnancy desire in the next year: yes (n=4), no (n=9), don't know (n=6).

Results: All but two women (n=17) reported inconsistent or no contraceptive use. Interestingly, some women found their risk of pregnancy was equal with and without contraception based on perceptions of specific contraception efficacy (e.g., condoms versus pills); fertility and fecundity concerns; and high abstinence self-efficacy themes. Stratified analysis revealed that women who desired pregnancy in the next year or were uncertain of whether they wanted to get pregnant in the next year reported similar perceived susceptibility with and without birth control, compared to women not desiring pregnancy in the next year.

Conclusions: Findings highlight potential reasons why some women experiencing homelessness may perceive similar pregnancy susceptibility with both contraception use and non-use. Given the need to have higher susceptibility to pregnancy without contraceptive use for consistent contraception uptake, findings may explain lack of contraceptive behaviors and contraception preferences related to pregnancy desire.



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THE EFFECT OF BLACK CHURCH-GOING MEN'S PREFERRED SOURCE OF CANCER INFORMATION ON PROSTATE-SPECIFIC ANTIGEN (PSA) TESTING BEHAVIORS.

Brian J. Carter, Tzuan A. Chen, Dalnim Cho, Lorna H. McNeil, Shahnjayla K. Connors, Lorraine R. Reitzel

Purpose: Black men have a 76% higher prostate cancer incidence rate than White men and a prostate cancer mortality rate 2.2 times that of White men. Early detection by prostate-specific antigen (PSA) testing may improve survival outcomes. Here, we examine where black men prefer to obtain cancer information and whether the source of such information is associated with PSA screening behaviors.

Methods: Participants comprised a convenience sample of 298 Black men aged >45 (Mage= 55.69+8.29) recruited from 3 churches in Houston, Texas. Self-reported data included preferred source of information on cancer [doctor or health care provider (collectively, "Providers"), cancer organization, social network, internet, or other media (e.g., books, magazines)] and having received a PSA test within the last 24 months. A logistic regression model controlling for recruitment site, age, education, marital status, insurance status, household income, employment status, perceived social support, most recent source of information on cancer, satisfaction with patient-provider communication, personal history of cancer, family history of cancer, worries about cancer risk, and perceptions of cancer risk, examined associations between preferred source of cancer information and PSA test behavior.

Results: Overall, 60.40% of participants indicated their preferred source of information on cancer was a Provider, 9.06% a cancer organization, 2.35% their social network, 16.11% the internet, and 12.08% other media. About 38% of participants received a PSA test in the last 24 months. Results indicated that men who received information from a cancer organization or from their social network had lower odds of having a PSA test than those who received information from a Provider (AOR: 0.133, CI95%: 0.029-0.602; AOR: 0.08, CI95%: 0.007-0.938).

Conclusion: These results reveal opportunities to encourage black church-going men to obtain cancer information from Providers and to tailor the dissemination of such information by cancer organizations to better prompt PSA testing.

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PERCEPTIONS OF MASK WEARING, COVID-19 TESTING AND VACCINE UPTAKE AMONG COLLEGE STUDENTS DURING THE PANDEMIC

Ranjita Misra, Brenna O. Kirk, & Keith J. Zullig

OBJECTIVE: To investigate college students' face mask perceptions (FMPs) and face mask wearing behavior (FMWB) during the COVID-19 pandemic.



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METHODS: Participants from a large public Mid-Atlantic university completed an online survey in April 2021 (N=628).

RESULTS: The sample modal age was 17-22 years (66.3%); 62% were female; 78% reported very good or excellent health status; 78.1% were vaccinated and 87.4% tested or would get a COVID-19 test. FMPs included 10 items intended to prevent the spread of COVID-19; higher scores represented more negative FMPs. Principal component analysis with varimax rotation indicated three FMPs factors explaining 64.3% of the variance: positive perceptions, negative perceptions and difficulty wearing masks. Cronbach's alpha was 0.88, 0.79 and 0.58, respectively. Multiple regression analysis of positive FMPs was associated with female gender, very good or excellent health status, older students, vaccine uptake and COVID-19 testing (adjusted R2 = 27.9%; F < 0.001). FMWB included 14 items with higher scores indicating lower support for FMWB. Cronbach's alpha was 0.90. Younger students, those who were unvaccinated and untested for COVID-19 were significantly more likely to support no FMWB. Male students and those with very good/excellent health status were more likely to support no FMWB than females and students with poor/fair/good health status, respectively. Interestingly, students who attend classes' in-person were also more likely to support no FMWB vs those not attending in-person. The model was significant with 27.4% of variance predicted by the variables (Adjusted R2 = 27.4%; F < 0.001).

CONCLUSIONS: Mask usage and vaccination offer the best forms of prevention for COVID-19. Findings of disparities in perceptions of mask wearing by gender, age and health status provide opportunities for college and universities to tailor public health education and communications on the importance of wearing masks to prevent exposure, vaccine uptake and testing during the pandemic.

Board 314

A PROFILE OF COLLEGE STUDENTS WHO REPORT WEARING FACE MASKS DURING COVID-19 VIOLATES THEIR CIVIL LIBERTIES

Keith J. Zullig & Madelin Gardner

PURPOSE: Mask wearing is a proven COVID-19 mitigation strategy with those who believe face mask use violates their constitutional rights constituting a challenging subgroup to evidence-based public health practice. Thus, this study explored differences in demographics, face mask wearing behavior, and vaccination perceptions among students who report face masks violate their civil liberties compared to those who do not.

METHODS: Participants from a large public Mid-Atlantic university completed an online survey in April 2021 (N=619).

RESULTS: Students (n=135, 21.8%) who reported wearing face masks violates their civil liberties were significantly (p<.05) more likely identify as male, report very good or excellent health, attend in person classes, and significantly less likely to report being vaccinated when compared to those who do not.



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These students were also significantly (p<.0001) more likely to endorse not wearing masks because masks make it difficult to

breathe, provide a false sense of security, and because they value their independence. In addition, these students were significantly (p<.0.5) more likely to endorse not being vaccinated because they are at low perceived risk for infection, of unknown side effects, and that vaccines were rushed. Adjusted logistic regression analysis suggested that students who reported face masks violate their civil liberties were 5.17 times (95% CI: 3.17-8.45) more likely to report being unvaccinated. However, the students who reported face masks violate their civil liberties and vaccine status were only modestly positively correlated (r=.36, p<.0001).

CONCLUSIONS: Preliminary results suggest college students who reported face masks violate their civil liberties in this sample were more likely to be male, in good perceived health, attend in person classes, and unvaccinated. However, these individuals are not necessarily the same individuals who are unvaccinated, suggesting different public health messaging may be required to increase both face mask use and vaccinate uptake.

Board 315

DELTA-8 THC RETAIL SALES IN FORT WORTH, TEXAS

Matthew E. Rossheim, Cassidy LoParco, Drew Walker, Melvin Livingston, Sofia Olsson, Kayla McDonald, Andrew Yockey, Justin Luningham, Amanda Kong, & Doug Henry

Objectives: To describe patterns of retail sales of Delta-8 THC products when retailers assumed sales were legal but were unregulated by the state.

Methods: There were 1,961 stores in Fort Worth, TX with retail alcohol, tobacco, and/or consumable hemp (CBD) licenses. Telephone data were collected from stores across Fort Worth, prior to the October 15, 2021 announcement that Delta-8 THC sales were illegal in Texas. Among these 1,961 locations called, 1,223 (62%) were contacted. Using 9-digit zip codes, area deprivation index (ADI) scores for each store were merged with these telephone data.

Results: Among the 1,961 locations called, 62% were reached. Of 1,223 retail stores contacted, 11% reported selling Delta-8 THC products. Among these 133 stores, 92% had a retail tobacco license. Most retailers sold products to smoke/vape (96%), and 76% sold edibles. Edibles were less expensive than products for smoking/vaping (mean = \$15.39 vs. \$23.97, t = 4.1, p < 0.001). Compared to stores that did not sell Delta-8 THC, stores that did tended to be in areas with greater socioeconomic deprivation (t = 2.3, p = 0.02). Most reported 21 years as the minimum purchase age; however, 4% reported 18 years or no minimum age.

Discussion: As of November 2021, Delta-8 THC sales are legal in Texas, due to a temporary injunction. This study provides the first retail assessment of Delta-8 THC product characteristics in an unregulated market. Delta-8 THC had widespread availability, and products often included inexpensive edibles. Further, Delta-8 THC retailers were disproportionately located in neighborhoods with greater socioeconomic deprivation, and there were discrepancies in the purported minimum age for purchase.



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These findings can help guide regulatory decision making and related harm reduction efforts, with a focus on the potential

impact on young people and populations with lower socioeconomic resources.

Board 316

TRENDS IN PREVALENCE OF SHORT SLEEP DURATION AND TROUBLE SLEEPING AMONG US ADULTS. 2005-2018

Shanshan Wang, Matthew Rossheim, & Rajesh Ranjan Nandy

Background: Understanding current trends in prevalence of short sleep duration and trouble sleeping is critical to informing public health policy and planning for management of sleep problems. The objective of the current study was to determine trends in prevalence of short sleep duration and trouble sleeping among US adults from 2005 to 2018, and assess how sleep trends vary by sex and race/ethnicity.

Methods: Seven cycles of the National Health and Nutrition Examination Survey (NHANES) data between 2005-2006 and 2017-2018 were analyzed. Trouble sleeping and sleep duration were self-reported. Short sleep duration was defined as sleep duration ≤ 6 hours. Agestandardized prevalence of trouble sleeping and short sleep duration were estimated among the overall US adult population, and by sex and race/ethnicity.

Results: From the 2005-2006 cycle through the 2013-2014 cycle, the age-adjusted prevalence of short sleep duration remained similar in the overall population (p for trend>0.05). Prevalence of short sleep duration appears lower in 2015-2018 than in 2005-2014 due to different measurement methods applied. Non-Hispanic Black people had the highest prevalence of short sleep duration among all the race/ethnicity groups in all seven cycles. From 2005-2006 to 2017-2018, there were increasing trends in age-adjusted prevalence of trouble sleeping in the overall population, among both men and women, and all race/ethnicity groups (p for trend<0.05). Compared to men, women had a higher prevalence of trouble sleeping. Among all the race/ethnicity groups, non-Hispanic White people had the highest prevalence of trouble sleeping.

Conclusions: Based on NHANES data, from 2005 to 2018, Non-Hispanic Black people had the highest prevalence of short sleep duration. The prevalence of trouble sleeping increased significantly between 2005 and 2018, and non-Hispanic White people had the highest prevalence.

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WHOLE EXOME SEQUENCING: PREGNANT LATINAS' PERSPECTIVES ON DISCLOSURE OF PREVENTABLE AND MEDICALLY ACTIONABLE ADULT-ONSET GENETIC FINDINGS TO THEIR CHILDREN

Emily Chang, Eleise Brooks, Luke Dotson, Melodie Tedross, Justin Kramer, Haocen Wang, Denise Martinez, Robin Page, Nora Montalvo-Liendo, & Lei-Shih Chen



A MULTIDISCIPLINARY SOCIETY OF HEALTH BEHAVIOR SCHOLARS AND RESEARCHERS

Purpose: Whole exome sequencing (WES) is a comprehensive genetic test which can detect genes related to preventable and

medically actionable adult-onset conditions such as the BRCA1/2 gene for breast and ovarian cancer. Nevertheless, disclosure of WES results to minors raises various ethical issues, including negative psychological impact, violation on minor's future autonomy, and interference of familial relationships. This study explores the views of pregnant Latinas – an understudied minority group in genomics research – on the disclosure of WES results regarding preventable adult-onset conditions in their children. Methods: Thirty-two pregnant Latinas in Texas underwent focus groups (N=13) and semi-structured interviews (N=19). NVivo was used to perform data analysis, and inductive coding methodologies were employed. Results: Most pregnant Latina women had less than a high school education (72%) and were covered by Medicaid or Children's Health Insurance Program (88%). Nearly all interviewees (97%) reported that they would disclose WES results to their children. Reasons included ensuring the child could adequately care for themselves in the future (46%), a moral obligation to the child (38%), and mentally preparing the child (31%). Most chose to disclose results when the child could understand the information or during adulthood (77%). Conclusions: Our study took an initial look into pregnant Latina women's perspectives on disclosing WES results regarding preventable and medically actionable adult-onset conditions to their children. Additional quantitative surveys with a larger sample size are needed in the future.

Board 318

A NATIONAL ASSESSMENT OF ON-PREMISE DRINKING ESTABLISHMENTS: DRINK PRICES, DRINK SPECIALS AND TOBACCO POLICIES

Cassidy R. LoParco, Drew Walker, Matthew E. Rossheim, Melvin Livingston, Pamela Trangenstein, Bita Khoshhal, Kwynn Gonzalez-Pons, & Dennis Thombs

Background: Bar and nightclub practices, such as offering cheap drinks, pricing promotions (e.g., 2-for-1), and permitting vaping, can increase the amount that college students consume and the risks to themselves and others. Despite the implications, few studies have assessed the presence of low-cost alcohol and vape-friendly environments around college students. The current study surveilled drink prices and specials, and examined associated characteristics of on-premise drinking establishments near large universities.

Methods: In 2018, telephone calls about prices, practices, and policies were made to 404 randomly selected bars and nightclubs within 2 miles of the largest residential universities in each state. Multivariable linear and logistic regression models examined associations between drinking establishment characteristics, drink prices, and specials. The Alcohol Policy Information System provided data on state-level alcohol policies.

Results: The average price for a beer and a shot of vodka were \$3.62 and \$4.77, respectively. Most establishments (65%) had happy hour specials, 6% had 2-for-1 drink specials, 91% sold food, and 9% sold cigarettes on-premise. Allowing vaping indoors (b=-0.54) and selling cigarettes on-premise (b=-0.79)



were associated with significantly lower vodka prices, whereas allowing cigarette smoking inside (b=-0.46) was associated with significantly lower beer prices. Lower beer prices (OR=1.35), selling food (OR=2.92), and no state law banning happy hour specials (OR=6.67) were significantly associated with higher odds of having a happy hour special. Allowing vaping indoors was significantly associated with higher odds of having a 2-for-1 drink special (OR=6.38).

Conclusions: The current study is one of the first to identify associations between business practices/policies of on-premise drinking establishments and drink prices. These findings provide some insight regarding how alcohol prices may be discounted to promote sales of other products. Given the high frequency of drink specials and strong association between price and consumption, more research is needed regarding alcohol prices/specials at on-premise settings.

Board 319

ASSOCIATIONS BETWEEN RETAIL SALES OF DELTA-8 THC AND FOUR LOKO IN FORT WORTH, TEXAS

Cassidy R. LoParco, Kayla McDonald, Matthew E. Rossheim, Pamela Trangenstein, Drew Walker, Melvin Livingston, Andrew Yockey, & Dennis Thombs

Objectives: Four Loko is a cheap and high-alcohol content product. Across the U.S., Four Loko retailers concentrate in impoverished areas; however, it is unclear whether this geographic patterning exists at a micro level, such as within a city. Delta-8 THC is an unregulated intoxicant that was legalized by the Farm Bill in 2018. It is unknown if retailers that sell risky products like Four Loko may be more likely to sell Delta-8 THC, creating niche stores that sell unregulated or intoxicating substances.

Methods: This study sampled 168 off-premise beer retailers in Fort Worth, Texas. Stores were contacted in September-October 2021 and asked whether they sold Delta-8 THC. Four Loko availability was obtained from the manufacturer's website. Area deprivation index (ADI) scores (range 1–10), a marker of socioeconomic disadvantage, were linked to each store's zip code. Multivariable logistic regression tested associations between having a retail tobacco license, ADI scores, Delta-8 THC sales, and Four Loko sales.

Results: 55% of stores sold Four Loko and 17% sold Delta-8 THC. Higher ADI scores (OR=1.15,95%CI=1.03, 1.28) and selling Delta-8 THC products (OR=8.50,95%CI=2.32, 31.17) were associated with increased odds of selling Four Loko. Having a tobacco license was also associated with increased odds of selling Four Loko products, although not statistically significant (OR=3.41,95%CI=0.99, 11.76).

Discussion: Stores that sold Delta-8 THC were 8 times more likely to sell Four Loko, suggesting these stores specialized in unregulated or high-risk products. Given associations between Four Loko sales and ADI scores, residents of socioeconomically deprived neighborhoods may have higher exposures to these dangerous products. Future research should assess the geographic distribution of Four Loko and Delta-8 THC sales and the etiology of health disparities and crimes near these establishments to support the development and implementation of public nuisance laws or policies that restrict the sale of unregulated/high-risk substances.



Board 320

CHARACTERISTICS OF DRINKING EPISODES ASSOCIATED WITH SIMULTANEOUS MARIJUANA USE AMONG UNDERAGE DRINKERS

Cassidy R. LoParco & Matthew E. Rossheim

Background: Drinking context is associated with quantity of alcohol consumed, particularly among underage drinkers. These contextual factors may also be associated with simultaneous use of other drugs while drinking, which is associated with increased experience of negative consequences compared to only drinking. This study examined associations between contextual factors of an individual's most recent drinking episode (i.e., how alcohol was accessed, where alcohol was consumed, the number of people they drank with) and whether they simultaneously used marijuana.

Methods: National Survey of Drug Use and Health data from 2010-2019 were used. The sample consisted of past-month drinkers under 21 years old (n=40,128 unweighted; N=7,707,382 weighted for nationally representative estimates). Multivariable logistic regression models were used.

Results: Compared to obtaining alcohol from family, individuals had higher odds of simultaneously using marijuana if the alcohol was taken from a home (OR=1.52,95%Cl=1.24,1.86), somebody gave it to them for free (OR=2.29,95%Cl=2.03,2.57), someone else bought it for them (OR=2.81,95%Cl=2.45,3.23), or they purchased it themselves (OR=3.13,95%Cl=2.66,3.67). Compared to drinking alone, drinking with more than one other person was associated with higher odds of simultaneous marijuana use (OR=1.34,95%Cl=1.10,1.62). Compared to drinking at home, drinking in someone else's home (OR=1.11,95%Cl=1.02,1.21), a car (OR=1.35,95%Cl=1.04,1.76), or more than one location (OR=1.29,95%Cl=1.09,1.52) were significantly associated with higher odds of simultaneous marijuana use; drinking at a bar was associated with lower odds of marijuana use (OR=0.51,95%Cl=0.40,0.63).

Conclusions: Simultaneous alcohol and marijuana use is associated with experiencing negative consequences, especially among young people. Given the associations between alcohol access, drinking locations, and simultaneous marijuana use, considerations should be given to strengthen alcohol prevention and control laws such as age verification for purchase, open container/DUI checkpoints, minor in possession, or social host liability. These strengthened policies may help reduce risky environments and increase detection and prevention of marijuana use among underage young people.

Board 321

IMPACT OF HURRICANE MARIA ON PHYSICAL ACTIVITY, SMOKING AND ALCOHOL CONSUMPTION AMONG PUERTO RICANS

Danyi Li, Ruopeng An, & Yuanyuan Yang



Purpose: Hurricane Maria, a deadly Category 5 hurricane, devastated Puerto Rico in September 2017. Hurricane Maria and its aftermath could profoundly influence people's health and risk behaviors, but relevant research remained scarce. This study examined the impact of Hurricane Maria on physical activity, smoking, and alcohol use among Puerto Rican adults.

Methods: Individual-level data were retrieved from the Behavioral Risk Factor Surveillance System 2015-2019 surveys. Greedy nearest neighbor propensity score matching with a caliper of 0.25 logit standard deviation were used to create a group comparable to Puerto Rican residents (N = 19,745). T-tests and chi-square tests were performed on pre-and-post matching samples.

The outcome models included difference-in-differences estimators containing two pieces of information: Before-and-after hurricane Maria and living in Puerto Rico or other states. Parallel trends of prevalences of any physical activity, current smokers, any alcohol consumption, and heavy alcohol consumption were visualized using non-parametric locally weighted scatterplot smoothing (LOWESS).

Results: The samples were well balanced after matching, with 99.1% Hispanics in both groups. Hurricane Maria was found to be associated with a 12.4 % lower odds of reporting any physical activity 95% CI (0.80-0.95) and with a 17.3 % higher odds of reporting any alcohol consumption 95% CI (1.07-1.29). The effects of Hurricane Maria on smoking and heavy drinking were not statistically significant.

Conclusion: Hurricane Maria was negatively associated with Puerto Rican residents' physical activity level but positively associated with alcohol use. Future studies should investigate the trajectories of natural disasters' sustained impact on health behaviors and underlying mechanisms. Long-term effects should also be examined to inform health behavior interventions for disaster survivors.

Board 322

SOCIAL MEDIA-ASSISTED INTERVENTIONS ON HUMAN PAPILLOMAVIRUS AND VACCINATION-RELATED KNOWLEDGE, INTENTION, AND BEHAVIOR: A SCOPING REVIEW

Danyi Li, Linyun Fu, Yuanyuan Yang, & Ruopeng An

Purpose: The purpose of this review is to identify, evaluate and summarize interventions delivered on or facilitated by social media with outcomes of Human Papillomavirus Vaccine (HPVV)-related knowledge, awareness, attitude, vaccination intention, and uptake. Methods: Systematically search and review the literature on Cochrane Library, PubMed, Web of Science, EMBASE, Scopus, and CINAHL. Standardized forms were used to abstract the basic characteristics, settings, guiding theories, and key findings of the interventions. Results: Twenty-four studies met the eligibility criteria. Sixteen were educational interventions delivered via social media platforms, and the other eight investigated the effect of different social media message contents and phrasing on improving HPV-related outcomes. The studies were published between 2015 and 2021, most (75%) in the US.



The most frequently used social media platforms were Facebook, and the most commonly adopted theory was the health belief model. More studies only targeted one stakeholder group: female adolescents and young adults. Evidence in males, minority race groups, socially disadvantaged populations, and underdeveloped countries is lacking. Existing interventions have shown preliminary but promising effects in improving HPV awareness and knowledge. Still, such improvements have not always been translated to improved behavioral intentions and vaccination rates. The contents and phrasing of social media messages and pre-existing individual characteristics of social media users moderated intervention effectiveness. Different combinations of messages sent by health organizations vs. individuals, scientific facts vs. personal stories, positively framed vs. negatively framed exert various influences on participants. Results are mixed regarding what kinds of messages on social media are more effective in improving HPVV. Conclusion: Social media could be a valuable tool for engaging participants and delivering HPVV interventions. Future studies should eliminate selection bias, include multilevel stakeholders, apply stronger theory bases, and investigate the potential of reducing health disparities by using social media.

Board 323

HPV VACCINE-RELATED GOOGLE SEARCHES IN THE UNITED STATES FROM 2010-2021: A GOOGLE TREND ANALYSIS

Akshaya Bhagavathula & Philip Massey

Purpose: Google searches have become a valuable tool to understand online health information-seeking behavior in the U.S. This study aimed to investigate the general public online google searches on the HPV vaccine from 2010 to August 31, 2021.

Methods: Google Trends (GT) was used to explore online searches on the HPV vaccine in each state, and year-over-year changes in the searches and queries were explored using relative search volumes (RSV). Linear regression analysis was performed to investigate the association between HPV vaccine searches and HPV vaccine coverage.

Results: The mean RSV of HPV vaccine searches was 48.9 ± 3.6 in 2010 and 47.8 ± 3.1 in 2021. Each year, from July to September, HPV vaccine searches were significantly higher (mean RSV: 55.0 ± 19.8). Year-over-year, HPV vaccine searches increased in West Virginia (5.5%), Alaska (4.8%), and Delaware (3.8%), while New Hampshire (-4.0%), South Dakota (-2.7%), Arkansas (-2.3%), and Iowa (-2.3%) decrease in HPV vaccine searches. "Vaccine for HPV," "HPV side effects," and "HPV vaccine side effects" are the top HPV vaccine-related queries. There was a significant positive correlation between HPV vaccine searches and HPV vaccine coverage (r = 0.380, P = 0.006).

Conclusion: Online searches related to the HPV vaccine increased over time, and most of their searches were related to vaccine safety and Gardasil for men. Targeted interventions and tailored messages during the July-September in states with fewer HPV vaccine searches are recommended.



Board 324

SALIENT BELIEFS ASSOCIATED WITH MARIJUANA USE IN AN EVOLVING SOCIO-POLITICAL ENVIRONMENT

Robert E. Davis, Jennifer Becnell, Oluwatoyin, E. Olatunde, Sarah E. Stokowski, Amanda Williams, Sarah Brown, Brooke Bouza, & Vinayak K. Nahar

Background: The changing marijuana legal climate in the United States has been associated with increased prevalence of marijuana use, more favorable general attitudes, and cultural norms towards its use among emerging young adults.

Purpose: The purpose of this study was to conceptualize salient beliefs associated with marijuana use in an evolving socio-political environment, utilizing the theory of planned behavior (TPB).

Methods: A prospective study (baseline and a 30-day follow-up) which utilized an electronic survey design was conducted in spring of 2020, following an initial qualitative pilot study carried out to elicit salient beliefs associated with marijuana use over the next 30 days. Students at a large US university (N = 514) completed baseline assessment of marijuana use and TPB constructs, 169 completed the follow-up assessment of actual behavior. The study analytics focused on those who completed both baseline and follow-up data collections.

Results: Roughly 60% reported previous illicit marijuana usage. Attitude and subjective norms accounted for 57% of the variation in intention for marijuana use in the next 30 days, while intention and perceived behavioral control significantly explained 51% of the variation in marijuana use over the assessment period.

Each set of elicited salient beliefs (9 behavioral, 6 injunctive normative, 6 descriptive normative, and 6 control beliefs) strongly correlated with their respective direct measures. Close friends and partners were the important referents, and descriptive normative beliefs strongly associated with intention and behavior. Perceptions of environmental, intrapersonal factors, and illegality of use exerted control over intention for marijuana use in the next 30 days and student marijuana use behavior.

Conclusions: The practical utility of the salient belief measures should not be overlooked as it presents practical foundations for intervention and a theoretical basis for the direct measures utilized in the TPB as a framework to explain 30-day prospective marijuana use.

Board 325

PREVALENCE AND CORRELATES OF DEPRESSION SYMPTOMS AND DISORDERS AMONG ADOLESCENTS AND YOUNG ADULTS IN CHINA FROM 2010 TO 2018

Danyi Li, Shiyou Wu, & Yiqi Zhu



Purpose: The purpose of this study was to examine the prevalence of depression among adolescents and young adults in China from 2010 to 2018 and describe the risk and protective factors associated with depression and its changes over time.

Methods: The analytic sample contains 843 participants aged 16-24 years in 2010 and followed through 2012, 2014, 2016, and 2018 in the China Family Panel Studies, a nationally representative data set. Descriptive statistics of depression scores, individual and family-level characteristics were presented. Five linear regressions on each survey wave and one multi-level mixed-effects model on the five-year longitudinal sample were conducted to explore the correlations to depression scores.

Results: The annual prevalence of depressive symptoms ranged from 25.8%, when the average age was 24.8 years, to 30.3%, when the average was 22.8 years. The annual depressive disorders prevalences ranged from 4.8% when the average was 20.9 years to 7.4% when the average age was 28.8 years. All the five-year models showed that females had a worse depression outcome than males; single, divorced, or separated had a worse depression outcome than married or cohabitated; self-rated health status was positively associated with the depression outcome. Age, education level, employment status, living in rural or urban areas, Hukou type, and family assets were significantly associated with lower depression scores after the year 2012 when participants aged 22 years on average. Family size was only found to be significantly associated with depression when participants aged 28.8 years.

Conclusions: This study found the prevalences of depressive symptoms and disorders among Chinese youth and young adults are relatively high. In addition, we found that with growing and stepping into adulthood, the depression outcomes became worse in the study cohort. Relevant social policies and structural social changes should facilitate the smoother transformation of adolescents into adults in China.

Board 326

THE INFLUENCE OF EDUCATIONAL ATTAINMENT ON FACTORS THAT INFLUENCE PREGNANT SMOKERS' INTENTIONS TO SWITCH TO E-CIGARETTES

Page D. Dobbs, Paul Branscum, Lydia Buckley, Eric Schisler, & Grace Stoops

Purpose: The Reasoned Action Approach (RAA) is the most current iteration of the Theory of Planned Behavior. The RAA posits that intentions immediately precede behavior, and intentions are influenced by one's attitudes, norms, and perceived control.

While the RAA has been used to understand women's intentions to switch to e-cigarettes during pregnancy, no research has examined the impact background variables (e.g., education) have on the model. Therefore, the purpose of this study was to examine the theoretical application of the RAA when controlling for educational attainment.



Methods: Currently active smoking pregnant women (n=267; 18-40 years) completed a national, online, cross-sectional survey about switching from cigarettes to e-cigarettes. Chi square analyses examined differences between demographic variables and past 30-day use of e-cigarettes. Next, structural equation modeling explored a higher order regression model for intentions to switch to e-cigarettes among those who had completed a college degree (i.e., associate's, bachelor's, or higher degree) and those who had not (i.e., completed high school diploma or less).

Results: Instrumental attitudes (p<.001), experiential attitudes (p<.01), and descriptive norms (p<.001) were significantly associated with intentions to switch to e-cigarettes during pregnancy among those who had completed at least an associate's degree. In turn, instrumental attitudes (p<.05), experiential attitudes (p<.05), descriptive norms (p<.001), and autonomy (p<.05) were significantly associated with intentions to switch among those who had completed a high school diploma or less.

Conclusions: Autonomy was uniquely associated with intentions to switch to e-cigarettes among pregnant active smokers who had not completed any college. Thus, pregnant women with lower educational attainment may underestimate nicotine addiction and believe they are in control of their ability to switch to e-cigarettes during pregnancy. Better understanding of behavioral intentions can help practitioners develop more meaningful cessation programs for pregnant women who smoke.

Board 327

E-CIGARETTE FLAVOR AND DEVICE PREFERENCES AMONG A SAMPLE OF PREGNANT WOMEN: A LATENT CLASS ANALYSIS

Page D. Dobbs, Yu Lu, Abbie Luzius, Rebecca McCann, & Emily Richardson

Purpose: Up to 7% of pregnant women in the US report using e-cigarettes at some point during pregnancy. Health concerns of fetal exposure to nicotine during gestation includes low birth weight. Although research has explored pregnant women's perceptions of harm about e-cigarette use, little research has explored e-cigarette flavor and device preferences among this population.

Methods: A sample of pregnant women (n=267) between 18-40 years of age who smoked at least one cigarette in the past 30 days were recruited to complete an online, cross-sectional survey between November and December 2019. Participants who had used e-cigarettes in the last 30 days (n=122) answered questions about the use of specific flavors and e-cigarette devices they used during pregnancy. Using a latent class analysis (LCA), we identified groups of pregnant women who preferred different flavors (i.e., tobacco, mint, spice, candy, alcohol, combined), e-cigarette devices (i.e., pod-mod, JUUL, tank, and disposable), who used THC in their vaping device, and who had modified or tampered with e-cigarette pods.



Results: The LCA identified four classes of e-cigarette users among the sample of pregnant women: users of JUUL tobacco and mint flavors (46.99%), users of all flavors and all pod-mod devices (including JUUL) who modified their pods and used THC (31.41%), users of all flavors and devices (12.56%), and users who included THC in their device and preferred tobacco and mint flavors in tank devices (9.04%).

Conclusions: The use of THC was commonly reported among the sample, as well as the use of JUUL, a device that delivers high levels of nicotine to the user via a salt-based solution. Understanding preferences and use patterns of e-cigarettes by grouping pregnant women who use e-cigarettes into classes can help practitioners develop educational campaigns about nicotine cessation programs that fully understand how these women are using these novel products.

Board 328

BARRIERS AND DIABETES CARE QUALITY IN U.S. PUBLIC SCHOOLS

Ruopeng An, Danyi Li, Marjorie Cole, Katherine Park, Mengmeng Ji, Aaron Lyon, & Neil H. White

Objectives: This study examined the influence of multi-level barriers to school diabetes care quality.

Methods: An online survey was administered to nurses in Missouri K-12 schools (N=245). Fifty-seven potential barriers in five domains (at individual, school, community, social/cultural, and political/economic levels) were assessed. Thirty-eight criteria for care quality were developed based on NIDDK's school diabetes care guidelines. Structural equation modeling was performed to examine the effect of barriers on school diabetes care quality.

Results: School nurses' heavy workloads, teachers/parents' lack of training/knowledge on evidence-based practices, lack of funding from government and districts, and schools serving disadvantaged or rural populations were among the key barriers to school diabetes care. Deficiencies in care quality were identified in areas including knowledge/training, communication, school policies, resources and environment, physical activity engagement among students with diabetes, school nurses' diabetes management practices, and trained diabetes practitioners' responsibilities. School diabetes care barriers, overall, were inversely associated with care quality—one-standard-deviation increase in the barriers was associated with a 0.163 (95% confidence interval=0.002-0.324) standard-deviation decrease in care quality.

Conclusions: Multi-level policy interventions were called to address these barriers in order to improve care quality and ensure the healthy growth of students with diabetes.

Board 329

THE LONGITUDINAL ASSOCIATIONS OF NEGATIVE SPILLOVER WITH CHRONIC CONDITIONS AND THE MEDIATING ROLE OF PSYCHOLOGICAL WELL-BEING



Erum Z. Whyne, Jihun Woo, & Mary A. Steinhardt

Purpose: Stress from one life domain (work) can negatively interfere or lead to stress in another domain (family), causing spillover. Negative work-family spillover (WFS) and family-work spillover (FWS) are associated with worse health outcomes; however, few studies have examined the longitudinal impact of spillover and potential mechanisms linking WFS and FWS to health outcomes. This study examined the longitudinal associations of WFS and chronic conditions, and FWS and chronic conditions (17-19 years later), as well as the mediating role of psychological well-being (8-11 years later).

Methods: A subset of participants (N=2350) from the Midlife in the United States (MIDUS) study completed 3 waves of data collection over the course of 19 years. Structural equation modeling was used to test the direct association between WFS with chronic conditions (Model 1), the direct association

between FWS and chronic conditions (Model 2) and the indirect associations via psychological well-being. Demographics and baseline chronic conditions were controlled for on both models.

Results: For Model 1, WFS was positively associated with chronic conditions directly (b= .096, p<.01) and indirectly through psychological well-being (b= .083, p<.001). WFS was negatively associated with psychological well-being (b= -.230, p<.001) and psychological well-being was negatively associated with chronic conditions (b= -.359, p<.001). For Model 2, FWS was positively associated with chronic conditions directly (b= .066, p<.05) and indirectly through psychological well-being (b= .098, p<.001). FWS was negatively associated with psychological well-being (b= -.267, p<.001). and psychological well-being was negatively associated with chronic conditions (b= -.368, p<.001).

Conclusions: Negative WFS and FWS are longitudinally associated with a greater number of chronic conditions (17-19 years later), and psychological well-being partially mediates both associations. This study suggests WFS and FWS are significant predictors of chronic conditions; enhancing psychological well-being may help alleviate some of the harmful effects of negative spillover on health outcomes.

Board 330

WHY DO THOSE AT MINIMAL RISK OF DISEASE COMPLY WITH PUBLIC HEALTH MEASURES DURING THE COVID-19 PANDEMIC?

Gemma Postill, Cindy Adams, & Caroline Ritter

Introduction: Motivating compliance in young adults, who often have large social networks and at the lowest risk of adverse outcome from COVID-19 infection, is critical to reducing disease transmission. Our objective was to investigate why young adults living in a low-risk setting followed public health guidelines.

Methods: A qualitative research approach was chosen to gain an in-depth understanding of participants' beliefs, feelings, and experiences. Semi-structured interviews were conducted in April 2021 with 30 adults (in their 20s) living in Prince Edward Island (PEI),



the province with the lowest COVID-19 case rate in Canada. Thematic analysis was used to create a codebook based on the theoretical domains framework, which was then inductively modified to reflect the participants' beliefs; qualitative mapping was used to understand the connection between codes and generate themes.

Results: The analysis identified several themes, common to all participants, that explained why (not) participants complied to public health guidelines. These themes were applicable to the five public health measures studied (mask wearing, social distancing, quarantining, travel restriction, and vaccination), demonstrating commonalities in low-risk individuals' rationales for compliance. However, there were important contrasts between different public health measure with respect to whether the theme was a barrier or facilitator of compliance. For example, regarding the theme "foreign territory"; the novelty of mask wearing made complying difficult and unappealing, whereas the novelty of circuit breakers promoted compliance.

Conclusions: This study illustrates that the distinct motivators and barriers for each public health measure should be considered to ensure the compliance of low-risk young adults. This knowledge is critical given that with COVID-19 vaccinations available, an increasing percent of the population becomes "low-risk"; likewise, these findings can inform future public health emergencies, which are becoming more frequent due to globalization and climate change.

Board 331

CORONAVIRUS-19 VACCINE BEHAVIORAL INTENTION AMONG YOUNG ADULTS IN THE UNITED STATES

Heather K. Hardin, Khannah Wetmore, & Anna E. Bender

Background: Young adults have the lowest levels of coronavirus-19 vaccination behavior among all demographics; however, little evidence exists concerning predictors of young adults' coronavirus-19 vaccine behavioral intention.

Purpose: The purpose of this study was to examine associations with coronavirus-19 vaccine behavioral intention among young adults aged 18-25 years in the United States.

Methods: A cross-sectional descriptive study guided by the Health Belief Model was conducted in July 2020 concerning a future coronavirus-19 vaccine. Two hundred and fifty young adults' aged 18-25 years responded to the survey link shared via online platforms (Reddit, Twitter, Facebook, email). Correlations examined associations with coronavirus-19 vaccine behavioral intention. Hierarchical multiple regression evaluated predictors of coronavirus-19 vaccine behavioral intention.

Results: Half of participants identified as male and the participants were primarily white, non-Hispanic, single, and had at least some college. Greater coronavirus-19 vaccine behavioral intention was associated with lower loneliness, lower depressive symptoms, greater trust of healthcare provider, lower vaccine hesitancy, and lower sleep disturbance. The regression model predicted 40% of the variance in coronavirus-19 vaccine behavioral intention [F (11, 118) = 8.01, p < .01], which was predicted by greater trust of healthcare provider, lower vaccine hesitancy, and lower depressive symptoms.



Conclusion: Predictors of coronavirus-19 vaccine behavioral intention were all modifiable variables. When healthcare providers counsel young adults about coronavirus-19 vaccination, they should also assess young adults for depressive symptoms, sleep disturbance, and loneliness. Including social, sleep, and depressive symptom management components in health behavior change interventions has the potential to influence coronavirus-19 vaccine behavioral intention among young adults living in the United States.

Board 332

RETHINK VAPE PROVIDER TRAINING TO INCREASE TEEN RISK COUNSELING AT PEDIATRIC PRACTICES

Kelli J. England, Ann L. Edwards, Anisha S. Vanka, Natasha K. Sriraman, Rebecca J. Slimak, Paul T. Harrell, & Amy C. Paulson

Purpose: E-cigarettes or vapes are the most common form of tobacco use among adolescents, with 3.6 million US teens reporting use in 2020. The goal of this project was to incorporate vape screening and prevention education into teen patient visits at pediatric practices, to help providers feel comfortable with the topic of vaping, and to evaluate this process for continuous quality improvement.

Methods: A provider training and resource module was developed and implemented with partnering providers (N=33) in spring 2021, including provider-tailored education, talking points, billing codes, and parent/teen resources. Providers completed an anonymous pre/post survey regarding their knowledge, comfort level, barriers, and practices related to vaping education with their patients. Key-informant interviews were conducted to identify barriers and seek solutions to facilitate smooth incorporation of risk counseling into daily practice. Monthly meetings were held with providers to achieve continuous quality improvement in the practices. Frequency of vaping information provided in the depart summary were monitored.

Results: Training materials increased physician knowledge and confidence and led to more success in risk screening and counseling. Mean physician confidence in counseling teens on the risks of vaping increased from 3.33 at baseline to 4.88 (on a 5-point scale) following intervention, with 88% of physicians feeling strongly confident post-intervention in their ability to provide risk counseling to teens. Physicians indicating they often or always provide vape prevention information during a visit increased from 9% at baseline to 50% following the intervention. Average resources provided in depart summaries increased from 1/month at baseline to 94/month following intervention. Time constraints continued to be the greatest barrier to preventive counseling.

Conclusions: Provider-tailored training and resources increased physician knowledge of and confidence in the topic of vaping, as well as the frequency of screening and preventive guidance provided to teens and their families during patient visits.



Board 333

ARE SOME STUDENTS MORE VULNERABLE TO THE NEGATIVE EFFECTS OF SOCIAL MEDIA USE? THE ROLE OF EARLY ADVERSE CHILDHOOD EXPERIENCES AND SOCIAL MEDIA USE ON COLLEGE STUDENTS' MENTAL HEALTH DURING THE COVID-19 PANDEMIC

Lyudmyla Golets, Christopher J. Rogers, Velia Nunez, Jazmine Victoria, Claudia Toledo-Corral, & Jonathan Watts

Purpose: College students are the among the heaviest users of social media however, the relationship between social media use and mental health among young adults is unclear. Given that adverse childhood experiences (ACE) are consistent predictors of negative mental health outcomes including depression and anxiety, we explore the relationship between social media use and depression and anxiety and whether students with a history of ACE were more vulnerable to the negative effects of social media use than their peers with no ACE during the COVID college campus shut down.

Methods: Electronic surveys were sent to randomly selected students (N=1,313) at one of the most ethnically and socioeconomically diverse urban public universities in CA. Linear regression models assessed the direct effects of social media use on depression [using Center for Epidemiological Studies Depression scale (CES-D)] and anxiety [using Generalized Anxiety Disorder scale (GAD-7)] and whether these associations varied across ACE exposure.

Results: On average, respondents with high social media use had significantly higher depressive affect [B=0.061,(95%Cl=0.04, 0.08) and anxiety [B=0.047,(95%Cl=0.03, 0.07)]. In regard to ACE, as social media use increases, students with co-occurring ACE have especially aggravated symptoms of depression and anxiety compared to students with no ACE. Among students with low social media use, symptoms of depression and anxiety are similar across ACE exposure; however, among heavy users of social media, the severity (number of symptoms) of depression [18.21 (95%Cl=15.38, 21.04) vs. 9.92 (95%Cl=8.45, 11.39)] and anxiety [15.44 (95%Cl=12.940, 17.942) vs. 9.16 (95%Cl=7.85, 10.46)] is significantly higher for those with co-occurring ACE.

Conclusions: Students with high levels of social media use (relative to their peers) and cooccurring ACE have the poorest mental health outcomes in this sample. Interventions that focus on improving student mental health should consider the interplay between ACE and social media use.

Board 334

PERSPECTIVES OF SCHOOL STAFF ON THE HEALTH OF STUDENTS DURING THE COVID-19 PANDEMIC: A THEMATIC ANALYSIS OF INTERVIEWS FROM THE 2020-2021 SCHOOL YEAR

Mackenzie Stuenkel, Sarah Griffin, Holly Grady, & Kerry Sease



The COVID-19 pandemic has had significant impact on the health and well-being of children. In the school setting, students are subject to the similar increases in stress, while also being exposed to constant change in their routines and academic expectations. To identify the impact of school practice, policy, and interaction adaptations on middle schoolers' health and wellbeing at the end of the 2020-2021 school year, we conducted interviews with 12 staff members from 4 middle schools, including school nurses, administrators, and teachers. The purpose of the interviews was to understand the overall impact of the COVID-19 pandemic on the perceived health and well-being of staff and students from the staffs' perspective and on the delivery and dissemination of health programming and services. Interview data was transcribed and analyzed using an inductive and deductive summary thematic approach informed by the School Based Health Center programming model. Three themes were constructed from the data. Themes included 1) an increase in prevalence and severity of mental health conditions, 2) reliance on school-based health services and support for health management, and 3) an overall increase of daily stress on both staff and students. All themes spoke to the impact of changes on the mental health of staff and students. While teachers and administrators reported less student disruptions during class due to COVID-19 related classroom policies and decreased class sizes, they also indicated higher levels of connectedness between struggling students and staff because of the new shared experience. These interviews demonstrated themes of concern for students mental and physical health, but also increased burnout from school staff who struggle to maintain a supportive environment for students while also managing their own stress and fear.

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RISE IN MIDDLE SCHOOLERS' MENTAL HEALTH PREVALENCE AND UTILIZATION OF SERVICES IN SCHOOL-BASED HEALTH CENTERS DURING THE COVID-19 PANDEMIC: DATA FROM THE 2020-2021 SCHOOL YEAR

Mackenzie Stuenkel, Sarah Griffin, Kerry Howard, Holly Grady, & Kerry Sease

School-based health centers offer health services to students within the school that they are based. The school-based health centers in the present study provides care for students including treatment and management of acute illness/injury, chronic conditions, preventative care, and mental and behavioral health conditions. An ongoing evaluation of these schoolbased health centers in five middle schools has tracked utilization patterns of students over three school years. The purpose of this analysis was to examine prevalence of visits related to mental health during the 2020-2021 school year, which represents students' return to school during the COVID-19 pandemic. A regression analysis of visits during the 2020-2021 school year compared to previous years showed significantly higher odds of a visit being for mental health during the 2020-2021 school year (OR=2.44, 95%CI [1.93, 3.09], p<.0001). Of the 392 visits to the centers over the 2020-2021 school year, 163 were related to a mental health encounters, including screenings for mental health conditions (46%) and ongoing treatment and management of existing conditions (54%). The proportion of mental health visits to total visits during the 2020-2021 school year demonstrates an increase from the combined previous two years (n=163, 42% compared to n=346, 23%). Of the visits related to ongoing management, the most frequent conditions were attributed to anxiety and depression. Utilization patterns also



demonstrated increased frequency of repeated visits by students with diagnosed mental health conditions, with 67% of students having visited the centers more than once. These findings echo the national trends for increasing prevalence of mental health conditions due to the COVID-19 pandemic and demonstrate these patterns and needs within middle school students.

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PEDIATRIC ASTHMA MANAGEMENT: PERSPECTIVES FROM PARENTS/GUARDIANS, HEALTHCARE PROVIDERS, AND COMMUNITY SUPPORT PROVIDERS

Laura J. Rolke, Sarah F. Griffin, & Kerry K Sease

Pediatric asthma management involves regular clinical follow-up, medication adherence with a well-formed plan, avoidance of environmental triggers, and continual patient and parent/guardian education. The purpose of this study is to compare the experiences of parents/guardians with both clinical and community support service providers' experiences and perspectives of healthcare visits, family uptake of clinical recommendations, and the impact of outside agencies on asthma self-management behaviors. Twelve parents/guardians of Black/African American Medicaid-insured children with a moderate persistent asthma diagnosis, five clinical providers in a medical home setting, and six community support service providers were interviewed virtually about pediatric asthma management in Fall 2020 and Spring 2021. Interviews ranged from 15 to 59 minutes and were transcribed verbatim. The transcripts were analyzed deductively and inductively by a three-person coding team with an overall percent agreement of 88%. Themes from the analysis include 1) Parents/Guardians and clinical providers vary in their views of asthma management responsibility, 2) Systems level healthcare factors impact asthma management behaviors and asthma education, 3) Community support service agencies are needed to reduce barriers and reinforce asthma education, and 4) Support and connection with clinical providers is a necessary component to asthma care. Most parents did not identify COVID-19 as a major factor with their child's asthma management, but clinical providers and community support service providers discussed how COVID-19 disrupted normal processes for healthcare visits. This study documents some of the modifiable and nonmodifiable dynamics that influence the development and continuation of pediatric asthma management behaviors through a socioecological lens.

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SOCIAL AND STRUCTURAL DETERMINANTS OF ACCESS TO MEDICAL CARE AMONG MEDICARE BENEFICIARIES

Samuel D. Towne, Boon Ng, Adam Reres, Dawn Oetjen, Reid Oetjen, & Su-I Hou

Introduction. Identifying factors associated with accessing medical care among potentially vulnerable populations of largely older adults is timely, especially as this population is expected to grow substantially over time.



Methods. Surveys were collected among a nationally representative sample of community-dwelling Medicare beneficiaries residing in the continental US in 2017. Survey-weighted multivariable logistic regression analyses modeled the dichotomous outcome of one's satisfaction (unsatisfied versus satisfied) with 'the ease and convenience of getting to a doctor or other health professional' (clinician). Multivariable analyses included several theory-informed social and structural determinants of health inequities. Odds ratios and corresponding 95% Confidence Intervals (CI) are presented for adjusted analyses.

Results. Factors associated with reporting being unsatisfied with the ease of getting to one's clinician included: Hispanic ethnicity versus non-Hispanic White (OR=1.70, 95%Cl=1.13-2.54); having a higher education (higher than high school versus no high school degree: OR=1.98 95%Cl=1.32-2.98); age (aged <65 versus 75 and older: OR=1.48, 95%Cl=1.001-2.19); usual time taken to get to doctor's office (more than 30 minutes versus less than or equal to 30 minutes: OR=2.41, 95%Cl=1.76-3.30); and interaction of rurality (rural versus urban) and having social limitations (yes versus no) due to health (interaction term, p=.0430) where we find several differences, including, a higher likelihood of being unsatisfied with the ease of getting to one's clinician among: metropolitan/urban residents with social limitations versus metropolitan/urban residents without social limitations (OR=5.40, 95%Cl=3.70-7.88); rural residents with social limitations versus rural residents without social limitations (OR=2.94, 95%Cl=1.78-4.85); and cross-rurality comparisons with rural residents with social limitations more likely than metropolitan/urban residents with social limitations (OR=1.77, 95%Cl=1.18-2.65).

Conclusion. This study sheds light on the relationship between social and structural determinants of health inequities and ease of accessing medical care among Medicare beneficiaries and variation among key factors thereby holding insight for local, state, and federal stakeholders.

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INVESTIGATING COHORT EFFECTS AND THE ASSOCIATION BETWEEN MARITAL RELATIONSHIP QUALITY AND PHYSICAL ACTIVITY

Shannon C. Montgomery, Kasey E. Longley, & Joseph G. Grzywacz

Purpose: Physical activity (PA) declines progressively across adulthood. Whilst the majority (80%) of Americans marry, evidence surrounding how marriage may affect PA is underdeveloped. Life course theory suggests that marital interactions are subject to social and economic influences across time. This study aims to understand whether social mechanisms underlying marriage are associated with PA and if the roles of marital support and strain are changing across time. The two-handle design spanning two different cohorts approximately 20 years apart allowed for insight into how period effects may indirectly impact the relationship between marriage and PA.

Methods: Data from two cohorts of the Midlife in the United States (MIDUS) study were analyzed: MIDUS 1 (M1, 1995) and MIDUS Refresher (MR, 2007).



Multinomial logistic regression analyses tested associations of spousal support and spousal strain with PA, controlling for demographics. Additionally, the models tested for a difference by sex, and for mood as a mediator.

Results: In the earlier cohort (M1), spousal support was associated with regular PA, whereas spousal strain was associated with both regular and some PA. In the later cohort (MR), only spousal support (not strain) was associated with some (but not regular) PA. Mood was a complete mediator of spousal support for regular PA, and a partial suppressor of spousal strain in M1, but irrelevant in MR. The findings did not differ significantly by sex in either cohort.

Conclusions: In the earlier cohort, support and strain were associated with PA and mood was implicated in those associations. However, the pattern of associations was notably different in the later cohort. Changing family dynamics and diverging economic climates may contribute to observed differences between marital quality and PA across time. This suggests the need for an integrated life course epidemiological approach to explain patterns of health-related outcomes within a changing world.