

### **Impact of Delta-8-THC Warning Labels on Perceived Intoxication, Harm, and Susceptibility among Adolescents**

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**Background:** Youth use of hemp-derived cannabis products containing psychoactive  $\Delta 8$ -tetrahydrocannabinol (delta-8-THC) is prevalent in the United States (US). Delta-8-THC is intoxicating, however delta-8-THC products are not subject to warning labeling requirements in many US states. This experiment determined effects of hypothetical cannabis warning labels on perception of delta-8-THC gummies and vape products.

**Methods:** A mixed within-between-subject experiment was embedded into a 2023 survey of 3,647 Southern California adolescents. Participants were randomized to view photos of delta-8-THC edible and vape products under one of three conditions (control [unmodified] vs. standard size warning label [universal cannabis warning symbol, government warning text, instructions for use, and text stating it was cannabis-infused] vs. larger warning label [same as standard label with larger cannabis warning symbol]). After image exposure, we measured anticipated intoxication, perceived harm, and susceptibility to use the respective delta-8-THC products. Moderation by product type and cannabis use status were assessed.

**Results:** Youth who viewed delta-8-THC products with larger warning labels (vs. control) reported greater anticipated intoxication (Mean Difference[MD]= 3.10, 95%CI=1.77-4.43 on 100-point scale), and higher odds that delta-8-THC products are bad for their health (Odds Ratio[OR]=1.21, 95%CI=1.06-1.37), pose at least some risk (OR=1.35, 95%CI: 1.09-1.68), and are the same or more harmful than marijuana (OR=1.36, 95%CI=1.16-1.58). There were no warning label effects on susceptibility and minimal differences across outcomes between larger versus standard warning labels. Warning label effects on perceived

harm were stronger for delta-8-THC gummies (vs. vape) and for never vs. ever cannabis-using youth (interaction p-values=0.0290 and 0.0006).

**Conclusion:** Requiring delta-8-THC products to conform to labeling requirements for cannabis products may increase understanding of their intoxicating effects and harm among cannabis-naïve youth. In lieu of federal regulations, states should consider implementation of delta-8-THC regulations such as labeling requirements that promote safety and reduce potential harm to youth.

### **Take Care of YOU: Exploring the Feasibility of a Storytelling Social-Media Driven Intervention to Promote HIV testing and PrEP in Black Women in the South**

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**Background:** Black women in the U.S. are disproportionately overrepresented in HIV incidence among women; the greatest burden is in the Southern U.S. HIV testing is fundamental to end the HIV epidemic and can ideally serve as a gateway to pre-exposure prophylaxis (PrEP). Storytelling interventions informed by the culture-centric model of health promotion may drive HIV prevention behavior in Black women. This study reports preliminary feasibility of a storytelling social media driven intervention to promote HIV testing and PrEP in Black women in the South.

**Methods:** The “Take Care of YOU” intervention centered a serial “community-built” story with additional health communication content delivered over 14 days through a private Facebook group. Participants (N=27) were recruited in two cohorts using targeted Facebook ads and multiple touchpoints to assess eligibility (18-39 years, Black women, with self-reported risk indications for PrEP) and eliminate bots. Participants completed a baseline (T1) and follow-up survey (T2). A cross-interview content analysis of transcribed data from qualitative post-intervention interviews

(N=20) administered 1 month after T2, was used to explore intervention feasibility with respect to acceptability, demand, implementation, practicality, expansion, and limited efficacy.

Results: Recruitment and enrollment was effective, with 77% retention at T2 (N=21). Daily engagement can improve, but exposure to posted content ranged from 100% to 50% over the course of the intervention. Participants described high acceptability for the story, intervention content, and mode of delivery, citing them as relatable, engaging, and informative. The group page protected privacy and offered opportunities for interaction. At T2, participants reported being “likely” or “very likely” to (1) get tested for HIV (61.9%) or (2) start taking PrEP (38.1%) in the next 3 months.

Conclusion: This preliminary assessment suggests proof of concept for recruitment, retention, data collection, and implementation. High acceptability supports a robust trial of the “Take Care of YOU” intervention.

### **Associations between housing stability and pregnancy prevention behaviors in a national sample of youth: A 2021 Youth Risk Behavior Survey analysis**

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Background: Youth unstably housed (i.e., sheltered, sleeping outdoors, doubled up, in hotels) are at increased risk for undesired pregnancy, yet pregnancy prevention behaviors (e.g., contraception use) have only been sporadically examined in youth unstably housed. The 2021 Youth Risk Behavior Survey (YRBS), now examining housing stability, offers a novel opportunity to examine such behaviors. This study aims to examine pregnancy prevention behaviors among a national sample of youth by housing status.

Methods: YRBS-participating youth who had sexual intercourse with an opposite-sex partner (n=12,847, 48.82% female) responded to housing instability questions (e.g., slept in a shelter, outdoors). Outcomes were any pregnancy prevention before the last sexual intercourse with an opposite-sex partner (yes/no) and specific types of pregnancy prevention: condoms, pills, rings, patches, and long-acting reversible contraception (LARCs). We calculated survey-weighted descriptive statistics and logistic regression odds ratios between the exposure (housing stability: yes/no) and outcomes, adjusting for race/ethnicity, grade, and gender.

Result: Approximately 2.67% of the sample reported housing instability, and of these, 8.36% used both condoms and another form of contraception, 10.23% used LARCs, 25.5% used any contraception (excluding withdrawal), and 31.34% used no pregnancy prevention before their last sexual encounter. Compared to stable housing, unstable housing was significantly associated with 2.54 higher odds of not using any pregnancy prevention at the most recent sexual encounters with the opposite sex (aOR 2.54, 95% CI 1.35, 4.74). There were no associations between housing status and LARC use, any contraception use, or dual condom/contraception use.

Conclusions: Youth unstably housed may face a higher risk of unintended pregnancy due to reduced use of pregnancy prevention methods. This study highlights the need to explore barriers and supports to reproductive planning, aiming to help clinicians, researchers, and public health workers better support these youth in preventing or managing pregnancy for more person-centered health promotion.

### **Masculinity as a Mediator in the Link Between Childhood Adversity and Alcohol Use Disorder Among Young Black Men**

Kwon, Elizabeth; Kogan, Steven, M

**Purpose:** Black men are disproportionately exposed to childhood adversity, which influences alcohol use disorder (AUD) in young adulthood. The current study investigates masculinity as a potential mechanism linking adversity to problematic alcohol use in adulthood among Black men. **Methods:** At baseline 408 young Black men (mean age = 23.11, standard deviation [SD] = 1.25) completed surveys. Masculinity was measured using the Masculine Attributes Questionnaire (MAQ) which is composed of reputation-based and respect-based masculinity. Reputation-based masculinity is oriented toward sexual prowess, toughness, and authority-defying behavior. Respect-based masculinity is oriented toward economic independence, socially approved levels of hard work and education, and committed romantic relationships. Childhood adversity consisted of two categories including measures of threat (abuse-related experiences) and deprivation (neglect or lack of resources), which were assessed using items from the Child Traumatic Questionnaire (CTQ) and Adverse Childhood Experience (ACE) scales. At the follow-up assessment (mean age = 27.18, SD = 1.42), participants completed the alcohol use disorder identification test (AUDIT). With structural equation modeling we simultaneously tested two mediating paths where different dimensions of ACEs (threat, deprivation) affected different types of masculinity (reputation-based, respect-based), which in turn predicted AUD independent of drinking at previous waves. **Results:** The final model showed a significant mediating effect where deprivation decreased respect-based masculinity (beta = -0.127, 95% confidence interval [CI] = -0.182, -0.075), and higher respect-based masculinity decreased the risk for AUD (odds ratio = 0.571, 95% CI = 0.212, 0.968).

**Conclusions:** Deprivation in childhood may constrain opportunities that affect how Black men can garner masculine self-esteem. The development of masculine self-esteem based on risky rather than conventional behavior is a proximal risk factor for alcohol use problems in young adulthood. Interventions focusing on building healthy masculinity and providing beneficial socioeconomic pathways among low-income families might help to prevent alcohol use among young Black men.

### **Substance Use Disorder (SUD) Treatment Providers' Needs in Addressing Co-occurring Behavioral Addictions**

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**Introduction:** Behavioral addictions (BAs) are characterized as engaging in specific, repetitive behaviors to achieve an appetitive effect leading to preoccupation, impaired control and undesired consequences. BAs (e.g. gambling and sex addiction) share characteristics with substance use disorders (SUD), yet its treatment is understudied. We explored SUD treatment providers' perspectives and approaches for treating BAs.

**Methods:** This cross-sectional mixed-methods study collected data from May 2023-August 2024, using cold-call, email, in-person recruitment to survey SUD treatment providers (N=85), utilizing the 2021-2023 Newsweek/Statista model programs list (n=47) supplemented for comparison with convenience sampling (n=38). Providers from 65 unique treatment facilities across 20 states participated via Zoom, phone, and in-person. Quantitative questions assessed SUD, BAs, and types of services offered while qualitative questions assessed challenges and recommendations for treating BAs.

**Results:** The most common SUDs treated at the facilities were stimulants (95%), alcohol (93%), and opiates (92%). The most frequent treatment modalities for SUD were individual

therapy (94%) and group therapy (94%). Sex (89%), love (76%), and gambling (73%) addictions were the most common BAs observed. Less than half of providers (40%) formally treated BAs, 32% informally treated BAs, and 28% did not treat BAs. Among those providing BA treatment, individual therapy (95%), cognitive behavior therapy (82%), and motivational interviewing (80%) were commonly used. Three themes explained the lack of BA treatment: 1) SUD is the focus (26%), 2) logistical and structural barriers (65%; e.g. lack of training or insurance coverage), and 3) the normalization of BAs (9%). Overall, 33% recommended a need for increased training and BA specialists.

Conclusion: These findings highlight systemic challenges in implementing flexible SUD and BA treatment models, stemming from lack of insurance coverage or provider training. Further investigation is needed to develop effective, specialized treatment for SUD recovery and co-occurring BAs.

### **Impact of State Tobacco Control on Cigarette Purchases by U.S. Households (2015-2021): Insights from Integrated Nielsen Consumer Panel and American Lung Association's Strength Assessment Data**

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Purpose: Despite the established evidence for key tobacco control policies in reducing smoking prevalence, limited research has explored the varying impacts of specific measures across different policy contexts over time. This study evaluated the differential impacts of four state tobacco control measures on cigarette purchases across U.S. states from 2015 to 2021.

Methods: Data on cigarette purchases were obtained from the Nielsen Consumer Panel. The sample was limited to households that purchased cigarettes in 2015-2021 and participated in 2015 and  $\geq$ one subsequent year (n=10,187). Exposure variables were

scores sourced from the American Lung Association's State of Tobacco Control for each U.S. state, for smokefree laws, tobacco taxes, prevention/control funding, and access to cessation services between 2015-2021. Zero-inflated negative binomial regressions were specified to estimate the association of each tobacco control measure separately and collectively with annual household cigarette purchases, adjusting for sociodemographics and accounting for clustering within households and states.

Results: From 2015 to 2021, state average tobacco control scores changed from 33.4 to 32.5 for smokefree laws; from 19.9 to 20.7 for tobacco taxation; from 17.2 to 20.0 for prevention/control funding; and from 35.7 to 44.6 for access to cessation services. Higher smokefree law scores (adjusted rate ratio [aRR]=0.959, 95% CI=0.935, 0.984), tax scores (aRR=0.989, 95% CI=0.979, 0.998), and prevention/control funding (aRR=0.996, 95% CI=0.993, 0.998) were associated with fewer cigarette purchases over time. When including all four tobacco control measures in a single model, higher tax scores were associated with greater odds of not purchasing cigarettes (adjusted odds ratio [aOR]=1.023, 95% CI=1.001, 1.041); no other associations were found.

Conclusions: Findings emphasize the particularly critical role of smoking prevention efforts involving price-based deterrents, shifting social norms, and public health campaigns. Implementation of multiple comprehensive measures is crucial for continued progress in decreasing cigarette use.

### **Buffering the Impact of Structural Racism: The Protective Role of the Strong African American Families (SAAF) Program in Reducing Internalized Racism Among Black Youth**

Kogan, Steven, M; Kwon, Elizabeth

Purpose: Structural racism is a public health issue driving adverse health outcomes among Black Americans. Structural racism has been hypothesized to affect wellbeing

through the internalized racism, which occurs when children internalize stereotypes and false beliefs about their racial/ethnic group. Internalized racism has been linked to mental health, general health, and physical activity levels. Preventive interventions with Black families have the potential to attenuate the impact of structural racism. The Strong African American Families (SAAF) program, a family-based prevention intervention, aims to protect youth from the effects of racial discrimination. The current study assessed whether attending the SAAF program could buffer adolescents from internalizing structural racism. Methods: 404 Black youth were randomly assigned to the SAAF or control group at age 11. Per research recommendations, using 6 census tract metrics (Black/White disparities in Education, median income, dissimilarity, labor, housing, poverty), we created a structural racism risk index (0-6 risk factors) based on each of the 49 census tracts that children resided in. When youth were age 14 (SD = 0.43), their internalized racism was assessed. Multi-group structural equation modeling was conducted to assess whether the SAAF can protect youth from developing internalized racism when exposed to racism. Results: Youth who did not receive the SAAF intervention showed an increase in internalized racism when exposed to high levels of structural racism (beta = 1.842, 95% confidence interval [CI] = 0.415, 3.269). However, youth who received the SAAF intervention did not show increased internalized racism when exposed to high structural racism (beta = 0.246, 95% CI = -0.978, 1.471). Conclusions: The SAAF program may buffer the influence of structural racism on internalized racism. Protecting youth from deleterious effects of structural racism is a critical public health goal. Family-centered programs may be uniquely suited to address this goal.

### **Modification and Validation of Vaccine Hesitancy Scale for Adolescents**

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Background: Vaccine hesitancy is one of the top 10 global health threats. However, tools to measure vaccine hesitancy for adolescents does not exist.

Method: We modified an existing adult Vaccine Hesitancy Scale to create a teen vaccine hesitancy scale (tVHS) for adolescents. We conducted a nationally representative survey of 764 parent-teen dyads to validate our scale. We conducted exploratory factor analysis (EFA) to identify the scale's latent structure, followed by confirmatory factor analysis to confirm the factor structure suggested by the EFA. We separated the sample into two random subsets (1:1) and performed an EFA on the first subset and a CFA on the second subset. We evaluated internal consistency by Cronbach alpha values and construct validity by comparing tVHS scores to receive intention and likelihood to receive vaccines. Results: The final teen vaccine hesitancy scale (tVHS) from the EFA indicated a three-factor structure with 14 items. The factors are: lack of vaccine confidence (factor 1), perceived vaccine risks (factor 2) and trust in government (factor 3). CFA analyses of the tVHS indicated good fit (CFI=0.9; RMSEA=0.1; SRMR=0.077; NNFI-TLI=0.9). The factors exhibited alpha reliability coefficients of 0.9 for factor 1, 0.8 for factor 2 and 0.9 for factor 3. Higher tVHS score indicates higher level of hesitancy. As the teen VHS score increased, the percentage of adolescents who reported lower likelihood of receiving HPV, influenza, DTP and meningococcal vaccine also increased.

Discussion: Vaccine related decision-making for adolescents is no longer solely within the purview of caregivers or guardians. Hence, our tool can be useful to monitor vaccine hesitancy among adolescents and provide evidence to develop effective strategies.

### **Quantifying the effect of dynamic food environments on fast food visits with large-scale human mobility data**

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**Purpose:** Exposure to low-quality food environments saturated with fast food outlets is hypothesized to negatively impact diet. However, research linking such exposure to diet and health outcomes has predominantly focused on static food environments around home neighborhoods and generated mixed findings. In this work, we leverage population-scale mobility data, anonymized GPS trajectories from people's smartphones, in the US to examine 62M people's visits to food outlets and evaluate how food choice is influenced by the dynamic food environments people are exposed to as they move through their daily routines. **Methods:** We use a large, privacy-preserving, population-scale mobility dataset spanning a 6-month period during 2016–2017 and 11 metropolitan areas in the US to examine peoples' visits to food outlets and FFO in and beyond their home neighborhood and to investigate how these dynamic FFO visits are linked to features of the mobile food environments they are exposed to throughout their daily routines. We leverage 'natural experiments' to study the effect of food environment context on the decision to visit a FFO after people move location. **Results:** We find that a 10% increase in exposure to fast food outlets in mobile environments increases individuals' odds of visitation by 20%. Most visits to fast food outlets occur relatively far (a median of 6.74 km) from home and that exposure to low-quality food environments beyond the home is more strongly linked to increased visits to FFO than food environments around the home neighborhood. **Conclusions:** These findings, facilitated by novel large-scale mobility data, reveal a critical research gap in understanding how at-risk populations interact with food environments beyond the home in the context of their lifestyle routines,

and the causal effects of these FE exposures on food choices — insights pivotal to designing food environment interventions that meet people when and where they are needed.

### **Prevalence of co-occurring behavioral addictions among US adults receiving treatment for alcohol or substance use disorders**

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**Background:** Despite behavioral addictions (BAs) decreasing the length of alcohol and substance use disorder (AUD/SUD) abstinence, increasing risk of AUD/SUD relapse, AUD and SUD treatment centers rarely consider BAs in clinical protocol. Given the dearth of research investigating BAs among AUD/SUD treatment populations, we investigated the prevalence and gender and ethnic differences across several BAs (e.g., gambling, sex, pornography, love, exercise, food, internet, social media, gaming, shopping, work, and gossiping) among adults in the first 90 days of AUD/SUD treatment. **Method:** Data are survey responses (N=274) from adults in 11 AUD/SUD disorder treatment centers that agreed to participate. Patients were sent online surveys and reported past 6-months difficulty with any of the 12 BAs measured using valid and reliable instruments. Statistical models assessed prevalence, and gender and ethnic differences in vulnerability for co-occurring addictions. **Result:** The average age of the sample was 36 (SD=4.13); 51% were male; 47% identified as Non-Hispanic (NH) White, followed by Hispanic (35%), African American (10%), Multiethnic (5%), and Asian/ Pacific Islander (3%). Nearly half (46%) sought treatment for opioid use, followed by stimulant (22%), alcohol (20%), marijuana (5%), other substances (4%) or hallucinogens (2%). Many respondents (72%) reported one BA and nearly half (44%) acknowledged multiple BAs. The most common were exercise

(27%), internet (26%) food (22%), sex (20%), and gambling (20%). Males were more likely to meet criteria for pornography ( $\chi^2=16$ ,  $df=1$ ,  $p<0.01$ ) and sex addiction ( $\chi^2=12.60$ ,  $df=1$ ,  $p<0.01$ ) than females whereas females were more at risk for exercise ( $\chi^2=18.1$ ,  $df=1$ ,  $p<0.001$ ) gossip ( $\chi^2=11$ ,  $df=1$ ,  $p<0.001$ ), and work ( $\chi^2=5$ ,  $df=1$ ,  $p<0.05$ ) addictions than males. NH-Whites were more susceptible to food and gossiping addiction than other ethnicities ( $ps <.01$ ). Conclusion: Although co-occurring addictions are rarely acknowledged by AUD/SUD providers our findings underscore the importance of considering gender and ethnicity in the development of treatment protocol.

### **Substance use and mental health of international students in higher education: Systematic review**

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Objective: This study aimed to systematically summarize existing literature on substance use and mental health among international students attending American higher education institutions, ultimately identify research gaps, and provide directions for future research. Methods: This systematic review was conducted in accordance with the PRISMA guidelines. This study involved a search of four bibliographic databases (PubMed, PsychINFO, Google Scholar, and Cochrane Library) from inception until 20 September 2024. Eligible studies were categorized into three areas: epidemiology of substance use, interventions and programs, and qualitative explorations of substance use. Inclusion criteria were: (1) international students in U.S. higher education institutions, (2) quantitative, qualitative, or intervention studies on substance use or mental health, (3) substance use outcomes (e.g., alcohol, tobacco, cannabis, opioid, cocaine, sedatives, inhalants, hallucinogens and prescription medication, emerging drugs, ecstasy) and mental health disorders (e.g., manic depression, schizophrenia,

bipolar disorder, attention deficit hyperactivity disorder (ADHD), generalized anxiety disorder, obsessive-compulsive disorder, post-traumatic stress disorder, panic disorder, and antisocial personality disorder), (4) studies with available full text, and (5) studies passed the Quality Assessment Tool for Studies with Diverse Designs. Results: Of 301 studies reviewed, 34 met inclusion criteria. 23 examined the epidemiology of substance use, 10 qualitatively explored various substance use-related themes, and one evaluated substance use interventions and programs among international students. Few studies investigated the epidemiology of hallucinogens, prescription drugs, ecstasy, injecting drug use, or emerging substances. Alcohol was the primary focus, while tobacco and cannabis received limited attention. Digital and population-level interventions were also underexplored. Conclusions: The results of this systematic review highlight international students in the American higher education system as an underexplored population compared to their American peers. Future research should seek to explore and identify the substance use patterns of this population to inform the development of health promotion strategies and programs.

### **Effectiveness of Mindfulness-based Digital Health Interventions in Primary Care: A Systematic Review**

Tomar, Aditi; Das, Jyoti; Mazumder, Hoimonty; Hossain, Mahbub, M

Background: Mindfulness-based digital interventions include programs and applications delivered via digital platforms, such as smartphones, tablets, or computers that incorporate mindfulness practices. In this systematic review we aimed to thoroughly examine the efficacy of these digital mindfulness interventions in primary care settings. Methods: We systematically searched five major databases and additional sources using tailored keywords. Intervention studies were included if they

focused on mindfulness-based approaches using digital technologies in primary care settings. The protocol for this review is registered with Prospective Register of Systematic Reviews (PROSPERO ID: CRD42024500107) and reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines. Results: We identified 21 articles focused on intervention research regarding digital mindfulness applications in primary care settings. Most studies originated from high-income countries and included specific components for psychosocial care, in addition to medical, supportive, and educational elements. The use of digital mindfulness interventions was linked to significant improvements in anxiety, depression, psychological distress, quality of life, adherence to care, and patient satisfaction. However, operational challenges related to the sustainability of these interventions impacted long-term health outcomes across the studies. Conclusion: This systematic review demonstrates that digital mindfulness interventions can support individuals and communities offering holistic psychosocial care and patient education, thus addressing critical care gaps in primary care settings. Further research advancing the knowledge and practice of digital mindfulness resources is required to better understand how such innovations can be used meaningfully and sustainably.

### **Regional and Urban-Rural Disparities in HPV Awareness: A HINTS Data Study**

Tomar, Aditi; Smith, Matthew, Lee

**Background.** HPV vaccination rates largely vary across U.S. census regions and between rural and urban communities, with the Northeast and urban areas consistently having high vaccination rates. However, less is known about disparities in HPV awareness by geographical region and rural-urban residence. **Methods.** Data for 6,252 U.S. adults were analyzed from the 2022 Health Information National Trends Survey (HINTS

6). Chi-square tests and logistic regression were used to examine differences in HPV awareness between urban and rural residents and across the four U.S. census regions. The outcome variable HPV awareness was dichotomous, with responses “no” or “not sure” coded as 0, and “yes” coded as 1. Results. Overall, 56% had heard of HPV and the HPV vaccine. There were no significant differences in awareness between urban (55%) and rural residents (56%). Compared to the Northeast, residents in the West were less likely to be aware of HPV (OR=0.84, CI=0.70, 0.99). Sociodemographic disparities in HPV awareness were consistent among both urban and rural residents and across all four U.S. census regions. Specifically, non-Hispanic Blacks had a lower likelihood of HPV awareness compared to non-Hispanic Whites, while those with a college education were more likely to be aware than those with less than a high school education (all  $p<0.05$ ). Females were more likely to be aware of HPV than males ( $p<0.05$ ). Conclusion. This study highlights ongoing sociodemographic disparities by rurality and geographic region. Compared to the Northeast, the lower HPV awareness in the West may help explain its low vaccination rates. Despite higher HPV vaccine rates in urban areas, no significant differences in HPV awareness were observed by rurality, suggesting that factors beyond awareness may influence uptake. The persistent sociodemographic disparities underscore the need for ongoing efforts to address gaps in HPV awareness and vaccination, particularly among underserved and traditionally under-vaccinated groups.

**Exploring the Relationship Between Alcohol, Liver disease, Cancer and Sleep duration: Findings from the Health Information National Trends Survey**

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**Purpose:** Sleep duration is a significant driver of overall health and well-being, with insufficient sleep linked to chronic diseases and impaired cognitive function. This investigation examined the influence of alcohol consumption, lifestyle factors, chronic health conditions, and demographic variables on average sleep duration. While previous research has explored the effects of chronic conditions on sleep, fewer studies specifically examine the relationship between alcohol-related health conditions like cancer and liver disease, sedentary behavior, and sleep duration. This study addresses this gap by providing a comprehensive analysis of these relationships using a nationally representative dataset. **Method:** This secondary analysis leveraged large, nationally representative data (N=6,252) derived from the Health Information National Trends Survey 6 (HINTS) in 2022. Factors associated with sleep duration were examined using multivariable linear regression models. **Results:** Significant predictors of increased sleep duration included weekly alcoholic drinks quantity ( $\beta = 0.0853$ ,  $p < 0.001$ ), daily alcohol quantity ( $\beta = 0.0910$ ,  $p < 0.001$ ), average sitting time ( $\beta = 0.0676$ ,  $p < 0.001$ ), alcohol-related liver conditions ( $\beta = 0.5726$ ,  $p < 0.001$ ), Age ( $\beta = 0.0364$ ,  $p < 0.001$ ), and education ( $\beta = 0.0667$ ,  $p < 0.001$ ). Decreased sleep duration was associated with gender ( $\beta = -0.2510$ ,  $p < 0.001$ ), work status ( $\beta = -0.1861$ ,  $p < 0.001$ ), marital status ( $\beta = -0.1403$ ,  $p < 0.001$ ), and history of alcohol-related cancer ( $\beta = -0.3530$ ,  $p < 0.001$ ). **Discussion:** The results highlight the association between alcohol consumption, health behaviors, and demographic factors on sleep duration. Moderate drinking and sedentary behaviors

correlated with increased average sleep duration, while chronic conditions negatively impacted it. These findings suggest that public health interventions aimed at improving an individual's sleep cycle should take a comprehensive lifestyle assessment.

**Intermittent Fasting as a Treatment for Obesity in Young People: A Scoping Review**

Bakhsh, Jomanah, A; Salvy, Sarah-Jeanne; Vidmar, Alaina, P

Intermittent fasting focuses on the timing of eating rather than diet quality or energy intake, with evidence supporting its effects on weight loss and improvements in cardiometabolic outcomes in adults with obesity. However, there is limited evidence for its feasibility and efficacy in young people. To address this, a scoping review was conducted to examine intermittent fasting regimens in individuals aged 10 to 25 for the treatment of obesity focusing on methodology, intervention parameters, outcomes, adherence, feasibility, and efficacy. Due to the paucity of evidence in this age group, to adequately assess feasibility and adherence, all published studies of intermittent fasting in this age category, regardless of weight status and treatment intention were included in the review. The review included 33 studies (27 interventional studies and 6 observational studies) with 752 participants aged 15 to 25. Interventions varied with 8 studies in cohorts with obesity utilizing intermittent fasting as an obesity treatment. Thirteen studies utilized 8-hr time-restricted eating. Primary outcomes included cardiometabolic risk factors (7/27), anthropometric measurements (6/27), body composition (5/27), muscular performance (4/27), feasibility (1/27), and others (4/27). All 8 studies conducted in young people with obesity reported some degree of weight loss, although the comparator groups varied significantly. This review underscores the various utilizations of intermittent fasting in this age group and highlights its potential in treating obesity. However, the findings

emphasize the need for rigorous studies with standardized frameworks for feasibility to ensure comparability and determine intermittent fasting's practicality in this age group depending on the treatment outcome of interest.

### **The Relationship Between Attitudes Towards Nature and Sleep Quality Among University Students**

Mohd Rafiq, Alfiya Shaikh; Stasi, Selina; Chung, Sunghyun; Maddock, Jason

**Purpose:** Existing studies primarily focus on the direct effects of nature and physical activity on mental and physical health, often overlooking the potential role of attitudes towards nature. This study aimed to examine how university students' attitudes towards spending time in nature relate to sleep quality, while also assessing the moderating effects of mental health, physical health, and demographic variables. **Methods:** This study utilized an existing dataset from the "College Nature and Mental Health Study," conducted by Texas A&M University, involving 3,094 undergraduate students across 10 U.S. universities in Spring 2023. Attitudes towards spending time in nature were assessed using a modified version of the Attitude Toward Spending Time in Nature Scale. The scale comprises items to measure positive and negative attitude. Sleep quality was assessed using questions adapted from the Insomnia Severity Index (ISI) using self-reported difficulty sleeping and satisfaction with sleep, to comment on overall quality. Linear regression models were used to explore the relationship between attitudes towards nature and sleep quality, controlling for age, gender and race. **Results:** Negative attitudes towards nature were significantly associated with poorer sleep quality ( $p = 0.002$ ), while positive attitudes showed no significant effect ( $p = 0.112$ ). Mental health was the strongest predictor of sleep quality with better mental health associated with improved sleep. Older participants reported poorer sleep ( $p < 0.001$ ), while gender, and physical health

were not significant predictors of sleep quality. **Conclusions:** Negative perceptions of nature may contribute to sleep disturbances, possibly through cognitive processes such as rumination. Mental health was highlighted as a critical factor influencing sleep quality. Future research should investigate causal relationships and environmental factors that may mediate these effects. Limitations include the cross-sectional design, reliance on self-reported data, and failure to account for underlying health conditions and environmental factors that could influence attitudes towards nature.

### **Community and Connection: Factors Associated with Psychological Safety in SUD Recovery at The Phoenix**

Francis, Allison, N.; Patterson, Megan, S.; Liu, Sophie; Pew, Sage; Heinrich, Katie, M.; Prochnow, Tyler

**Purpose:** The Phoenix, a non-profit organization and sober-active community for individuals in recovery from substance use disorders (SUDs), aims to foster psychological safety among participants by providing a community in which they feel supported and safe. Psychological safety, an important construct related to recovery and quality of life, is the belief in which individuals feel comfortable being open with others without fear of negative consequences. The purpose of this study is to examine factors related to psychological safety among Phoenix participants. **Methods:** Online surveys completed by 79 individuals (45.6% female, 84.8% white, Mage = 38.3 years) in recovery from SUDs measured participants' demographic information, participation in The Phoenix, mental health, purpose in life, quality of life, and psychological safety). Participants also completed in-depth online interviews designed to measure personal support networks. Interviewees reported on 723 network members (Mnetwork size = 9.15, range = 2 - 15), and identified which of those members also participated in The Phoenix and/or were also in recovery from SUDs. A linear regression model explored

factors related to psychological safety in Phoenix participants. Results: Participants' mental health ( $\beta=0.35$ ,  $p<.01$ ), purpose in life ( $\beta=0.196$ ,  $p<.001$ ), and quality of life scores ( $\beta=0.26$ ,  $p<.01$ ) were positively associated with psychological safety, while having more network members also in recovery ( $\beta=-0.15$ ,  $p=.02$ ) was negatively associated with psychological safety. Conclusions: This study highlights key factors associated with psychological safety among participants of The Phoenix. Results suggest that promoting mental health support, fostering a sense of purpose, and focusing on improved quality of life can be associated with enhanced psychological safety. More research is needed to understand the dynamics of support networks, and how the presence of others in affects their feelings of psychological safety.

### **Cannabis vaping among youth: correlation with the age of e-cigarette use initiation between middle and high school students in the United States**

Nabil, Anas Khurshid; Chung, Sunghyun; Montemayor, Benjamin N.; Barry, Adam E

Purpose: Cannabis vaping behavior among youth incorporates a public health concern, specifically concerning school students. Research suggests that the age of e-cigarette use initiation is a critical determinant in measuring the risk for substance use progression. This investigation assessed whether the age of e-cigarette use initiation was correlated with ever-vaping cannabis. Methods: This research analyzed the National Youth Tobacco Survey, a nationally representative publicly accessible database (NYTS, 2023) that estimates the prevalence and risk factors of youth substance use behaviors. Respondents ( $N=22,069$ ) consisted of US middle and high school students who voluntarily agreed to participate in the survey. A logistic regression assessed whether the age of e-cigarette use initiation predicted ever-vaping cannabis, above and beyond the influence of demographics (sex,

race and ethnicity, grade). The age of e-cigarette use initiation was segmented relating to first-time users with two specific categories: early age of initiation (8 years old or younger-12 years old) and typical age of initiation (13 years old-19 years old or older). Results: Among female respondents, approximately 54% disclosed they had vaped cannabis in the past, while males accounted for 45%. Regarding race and ethnicity distribution, nearly 43% of White students reported ever-vaping cannabis, followed by 39% of Hispanic and 13% of African Americans. Upper-grade school students have a higher likelihood to report ever-vaping cannabis, such that students in 12th grade are 6.4 times more likely ( $OR=6.47$ ,  $p<0.01$ ) to be associated with ever-vaping cannabis than students who are in 6th grade. The early age of e-cigarette use initiation ( $OR=1.90$ ,  $p<0.01$ ) was significantly associated with ever-vaping cannabis compared to the typical age of initiation among school students. Conclusions: Given the continuing policy discussion over the legality of cannabis, future research should concentrate on exploring associations between the age of e-cigarette use initiation and lifetime cannabis vaping among diverse student populations.

### **An assessment of alcohol-impaired driving deaths in the American West, 2014-2022**

Nabil, Anas Khurshid; Barry, Adam E

Purpose: Alcohol-impaired driving is responsible for approximately one-third of the nation's total motor vehicle crash fatalities. Blood alcohol concentration (BAC) per se driving laws have been highlighted as an important factor influencing impaired driving, and a possible policy intervention to curb impaired driving in the US. Consequently, the state of Utah lowered their BAC driving law to 0.05% effective Jan. 2019 (all other states in the US are 0.08%). This investigation compared alcohol-related motor vehicle deaths between 2014-2022 for Utah and other surrounding states.

**Methods:** Utilizing the U.S. Census Bureau's geographic regions classification, this investigation aimed to assess (1) the percentage of motor vehicle driving deaths with alcohol involvement across states in the West (Region 4) from 2014-2022; (2) the top five states with the highest percentage of alcohol-impaired driving deaths in the West; and (3) compare Utah to other states in the West. Data associated with alcohol-impaired driving deaths for individual states were extracted through the County Health Rankings & Roadmaps. **Results:** From 2014 through 2022, there were approximately 99,118 alcohol-impaired driving deaths, representing 30.5% of the total driving deaths in the West (n=323,922). The majority of the reported number of alcohol-impaired driving deaths occurred in California (43,501), followed by Arizona (10,307), Colorado (8,196), and Washington (7,879). The top five states with the highest percentage of alcohol-impaired driving deaths include Montana (46.2%), Alaska (36.0%), Hawaii (35.8%), Washington (35.2%), and Wyoming (35.0%). On the contrary, Utah (20.5%) had the lowest percentage of motor vehicle driving deaths in the West. **Conclusions:** Even prior to the implementation of the 0.05% per se limit, Utah reported the lowest percentage of driving deaths with alcohol involvement throughout the West region. Alcohol-impaired driving remains an important public health issue, and further explorations on the impact of lowered per se driving laws represent a worthwhile endeavor.

### **Association Between Personal and Perceived Electronic Cigarette Use among Full-Time Enrolled First-Year Undergraduate College Students**

Nabil, Anas Khurshid; Barry, Adam E

**Purpose:** E-cigarette use represents a significant public health concern among adolescents and young adults. This investigation is a long-term assessment of personal e-cigarette use among American college students, compared to their

perceptions of peer e-cigarette use. **Methods:** Eight distinct iterations of the National College Health Assessment (NCHA) survey were analyzed, spanning Fall 2015 through Spring 2019. Respondents comprised full-time enrolled first-year undergraduate college students. Independent samples t-test and logistic regression were employed to assess the relationship between personal and perceived e-cigarette use within the past 30 days. **Results:** Approximately 9 out of every 10 (89%) respondents self-reported not using e-cigarettes in the past month; however, participants thought 8 out of every 10 respondents (77%) perceived the 'typical student' on their campus used e-cigarettes. The frequency of both personal e-cigarette use and perceived peer use increased over time, though the perceived frequency of peer use increasing considerably more in comparison. Perceptions of peer e-cigarette use increased with each successive year of the NCHA assessed, reaching their peak in Spring 2019. The strongest predictor of reporting personal e-cigarette use within the past 30 days was if college students think the typical student at their school has used e-cigarettes in the past 30 days (OR = 4.77, p = <.001). **Conclusions:** The findings presented highlight (a) the apparent disconnect between actual rates of e-cigarette use and the perceived frequency of peer e-cigarette use among college students, along with (b) the gross overestimation of typical student e-cigarette use. Given previous research contends students will increase their own substance use behaviors to meet what they perceive as the social norms among their peers, future work needs to investigate the correlation between self-reported vaping behaviors and perceptions of vaping behavior among campus peers.

### **Longitudinal analysis of pedestrian and cyclist crashes by social vulnerability across South Carolina**

Looney, Erin; Chupak, Anna; Hesam Shariati, Farnaz; Kim, Ye Sil; Kaczynski, Andrew

**Purpose:** Pedestrian and cyclist fatalities in the United States are alarmingly high, especially in disadvantaged communities. However, research on disparities in active transportation crashes in the Southeastern US, particularly analyses over time and studies examining the role of social vulnerability, is limited. The purpose of this study was to examine longitudinal trends in pedestrian and cyclist crashes and whether such changes varied by level of social vulnerability. **Methods:** This study used geocoded data obtained from the South Carolina Department of Transportation about all pedestrian (n=10,691) and cyclist (n=4,802) crashes occurring from 2011-2021. Using the CDC Social Vulnerability Index (SVI), all census tracts in SC (n=1084) were categorized into low (n=361), moderate (n=361), and high (n=362) vulnerability tertiles. Mixed models repeated measures, adjusting for daytime population, were used to assess trends in pedestrian and cyclist crashes and variations by SVI. **Results:** Over the course of the study period, pedestrian crashes increased by 89.8%, 58.9%, and 49.5% in low, moderate, and high vulnerability tracts, respectively. Average annual pedestrian crashes were greatest in high vulnerability tracts (mean=12.7, SD=11.1). Time (F=27.64, p<.0001) and overall SVI (F=46.78, p<.0001) significantly affected pedestrian crashes throughout the study period. The time and household composition and disability (HCD) tertile interaction was also significant (F=2.02, p=.0046). Cyclist crashes rose by 48.6%, 5.3%, and 29.1% in low, moderate, and high vulnerability tracts. High vulnerability tracts also had the greatest average annual cyclist crashes (mean=5.30, SD=9.53), with time and SVI significantly affecting cyclist crashes (F=4.37, p=.01).

The interaction between year and HCD tertile was significant for cyclist crashes (F=2.86, p<.0001). **Conclusion:** These findings highlight the need for targeted interventions in socially vulnerable communities to address increases in pedestrian and cyclist crashes. Significant disparities suggest that improving infrastructure and safety measures in these areas could reduce fatalities and advance environmental justice.

### **Advancing adverse drug event detection in social media through knowledge graph and Graphrag LLM architectures**

Davis, Andrew, S; Dickson, Billy; Cavar, Damir; Valdez, Danny; Tyers, Francis, M

**Introduction:** Improvements in pharmacovigilance applications could assist m-health interventions in identifying and mitigating disclosed adverse drug events (ADEs) from people's personal social media footprint. Our research tests a novel Natural Language Processing (NLP) and Machine Learning (ML) pipeline, which includes Knowledge Graphs (KGs)—diagrams that model how people are connected to events— and Retrieval-Augmented Generation (RAG)— an approach in machine learning that combines retrieving relevant information from a large dataset with generating responses— with Language Models (LLMs) as tools to extract and structure substance-related data pertaining to ADEs disclosed online. This architecture can adapt to new inputs, enhances decision-making transparency through "white box" architecture. These enhancements aim to offer an invaluable tool for deeper insights and enhanced decision-making in pharmacovigilance applications. **Approach:** We developed a tailored KG using self-reported social media entries on substance use (N=3,274), forming the basis for our GraphRAG + LLM architecture. This setup not only enriches data interactions and supports varied tasks, particularly detecting and classifying ADEs, but also allows for clear understanding of the model's outputs due to the transparent "white box" nature of

the GraphRAG LLM architecture. Our model's robustness is further enhanced by its ability to verify information against known drug attributes, ensuring precise ADE identification. Results: Early results confirm the model's ability to identify both existing and new ADEs, leveraging both contextual and relational KG data. The model also uncovers crucial insights into (1) ADE timing, (2) event location, (3) related drugs, and (4) exacerbating factors, thereby improving understanding of ADE nuances and aiding effective pharmacovigilance. Discussion: By integrating cutting-edge computational techniques, this study offers a scalable method to convert complex data into practical insights for health behavior improvement and drug safety. This proactive approach not only enhances ADE comprehension but also identifies under-researched aspects of ADEs, guiding future public health interventions.

### **Addressing LGBTQ+ Adolescent Health Equity in School-Based Health Centers: Staff Readiness and Student Perception of Care**

Brubaker, Anna, G; Sklar, Marisa; Shattuck, Daniel; Sebastian, Rachel; Willging, Cathleen

Background: School-based health centers (SBHCs) are an essential healthcare resource to provide students in the United States with behavioral, sexual, and reproductive services. Sexual and gender diverse (SGD) students experience greater rates of adverse health outcomes than their cisgender and heterosexual peers. Therefore, SBHCs are encouraged to modify service delivery environments such that they are more conducive to SGD students accessing healthcare and achieving improved health outcomes. Evidence-based structural competency modifications include having policies to prevent discrimination and create welcoming environments, training staff, and collecting and using data about sexuality and gender identities. This presentation draws from a larger

implementation trial to influence structurally competent changes in SBHCs to enhance SGD adolescent well-being. Methods: Staff across 25 SBHCs responded to surveys to explore organizational readiness to adopt structurally competent guidelines. Measures included the CDC's Supportive Attitudes and Practices Measures, the Lesbian, Gay, Bisexual, and Transgender Development of Clinical Skills Scale (LGBT-DOCSS), the Implementation Climate Scale (ICS), Organizational Readiness to Change Assessment (ORCA), the Acceptability of Intervention Measure (AIM), Intervention Appropriateness Measure (IAM), and Feasibility of Intervention Measure (FIM). Staff (n=40) were mostly female (90%), white (80%), Hispanic or Latinx (55%), cisgender (100%) and heterosexual (80%). Results: Baseline results indicate SBHCs differ in total ICS scores ( $F(19,46)=2.21, p=.014$ ), the ICS Recognition ( $F(19,46)=2.43, p=.007$ ) ORCA Leadership ( $F(19,46)=1.90, p=.039$ ), and ORCA Resources ( $F(19,46)=2.52, p=.005$ ). Discussion: SBHC staff report differing levels of readiness to implement structural competency guidelines for SGD students. Baseline findings for staff attitudes toward SGD students and preparedness to implement the guidelines, and student satisfaction with care, will also be presented. Based on these data, SBHCs will receive feedback reports and engage in coaching to aid their implementation of structural competency guidelines for SGD students. This study addresses the long-term goal of high-quality care and decreased health disparities for SGD youth.

### **Keeping Communities Safe: The Mediating Role of Collective Efficacy in Psychosocial Behaviors of Firearm Violence**

DeMello, Annalyn, S; Goodman, Michael, L

Background: Gun violence is a significant public health issue, yet understanding the socioecological factors contributing to it remains limited. Prior research links "social disorganization" to violence risk but has

underdeveloped its connection to gun violence. Social disorganization, often measured by low collective efficacy (social cohesion, trust, and norms of mutual benefit), may enable gun violence. This study aimed to explore differences in collective efficacy and psychological factors related to gun violence across census tracts in Galveston County with high and low rates of gun-related suicide and homicide. **Methods:** We used six years of hospital and medical examiner data to identify areas with the highest and lowest rates of intentional gun deaths in Galveston County, Texas. Data was linked and visualized on a digital platform called the Community Health Integrated Response Portal. A random sample of 1,000 households from these areas was invited to complete a structured questionnaire measuring loneliness, affective reactivity, violent retaliation ideation, shame, aggression, and fear of negative evaluation. Path analysis was applied to assess whether collective efficacy explained differences between high- and low-violence areas. **Results:** Sixty-eight participants from high- and low-violence areas completed the survey. Significant differences were found between the areas. Collective efficacy explained differences in loneliness (40%), affective reactivity (56%), retaliation ideation (65%), fear of negative evaluation (80%), shame (100%), and aggression (100%). **Conclusion:** Preliminary findings suggest that collective efficacy, a marker of social disorganization, may account for geographic differences in psychological factors contributing to gun violence. Interventions should focus on building collective efficacy, while further research is needed to validate these results. In November 2024, findings will be presented and discussed in focus group discussions with social service agencies in the affected communities.

### **Physician self-disclosures in the context of discussions about diagnosis and treatment**

White, Anne, E. C.; Tietbohl, Caroline; Bergen, Clara

**Purpose:** Physician self-disclosures can be an effective way to express empathy and build trust with patients, but can also be perceived as disruptive and not patient-centered. Our goal was to determine when and how physician self-disclosures are effective during clinical conversations. **Methods:** We draw on four datasets of video-recorded medical encounters in the United States: internal medicine and family medicine (n=180), geriatric medicine (n=52), and general surgery (n=175). We used the method of conversation analysis (CA), an approach for studying recurrent and systematic practices of verbal and nonverbal behavior. To date, we have identified 25 instances of physician self-disclosure. Each self-disclosure was analyzed with attention to its design, timing and patient response. **Results:** Our findings showed that physician self-disclosures were not solicited by patients but were physician-initiated. Physicians used self-disclosures as a communication strategy for three main purposes: 1) securing acceptance for treatment recommendations patients were resisting, 2) providing reassurance by highlighting a shared commonality, and 3) affiliating with positive reported patient health behavior. We found that the first two purposes of physician self-disclosures tended to receive either unclear or negative responses from patients, while self-disclosures that were delivered in service of the third purpose tended to be well-received and led to further supportive dialogue between the patient and physician. **Conclusions:** Physicians in these datasets made self-disclosures during conversations with patients for multiple purposes, but the effectiveness of this communication strategy varied depending on the context. Only self-disclosures that were delivered in the context of responding to patient reports of engaging

in healthy behaviors received positive uptake from patients. Future research should examine whether this approach could inform a communication intervention that encourages patients to maintain health behavior change.

**The components of reassurance in medical interactions: A conversation analytic study across medical contexts**

White, Anne, E. C.; Tietbohl, Caroline; Bergen, Clara

Purpose: Reassuring patients who do not have serious illnesses is considered a common task for clinicians, yet is a poorly understood clinical skill. Without effective reassurance, patients can feel distressed, dismissed, and even seek unnecessary care. Our study describes how physicians communicate reassurance, highlighting how the design and timing of reassurance can impact patient responses and the interaction outcome. Methods: Our study is the first to take a conversation analytic approach to the study of reassurance. Conversation Analysis is an approach for studying recurrent and systematic practices of verbal and nonverbal behavior. We draw on three datasets of video-recorded office visits in the US: internal medicine and family medicine (n=180), geriatric medicine (n=52), and general surgery (n=175). We identified 30 instances of physician responses to patient-initiated concerns that were medically unproblematic and analyzed how physicians delivered reassurance. We compared cases in which patients accepted vs. resisted reassurance to identify the essential features of effective reassurance. Results: We identified three distinct components of successful reassurance: 1) establishing an understanding of the patient's concern, 2) describing evidence supporting the physician's stance of a no-problem diagnosis; and 3) clearly communicating the physician's stance that the patient's concern is not a medical concern. We found that all three components were necessary for patients to accept reassurance, and that

patients did not transition to the next topic when a component was missed or insufficient. Conclusions: We found that patients oriented to three key components of reassurance as necessary to transition topics, and that this was consistent across a wide range of medical concerns. When providing reassurance, clinicians should consider whether all three of these components have been addressed sufficiently. Future research should examine whether this approach could inform a communication intervention that promotes patient-clinician relationships and minimizes unnecessary health care utilization.

**Investigating the Impact of Increased Employment of Rural Women on Gender-Based Violence and Menstrual Equity in Teso, Uganda**

Dey, Annesha; Kim, Lana

Purpose: This study investigated the extent to which expanding employment for rural women reduced occurrences of gender-based violence (GBV) in Teso, Uganda. More specifically, the correlation between menstrual hygienic deprivation/oppression and income levels was assessed. Methods: In collaboration with the Kikita Family Alliance for Development (KIFAD), 32 women were interviewed to share their experiences in the "Grow Together" program, which offers workshops and funds for women to start small businesses. They answered open-ended questions to compare their domestic relationships and hygienic lifestyles before and after the program's counseling. 14 men in Men's Action Groups (MAGs), community support groups for peaceful marital mediation, were interviewed and asked to assess how the program had changed their attitudes towards GBV and menstruation-based expenses. Results: Results revealed that there is a correlation between rural women joining the workforce and reduced experiences of GBV in Teso. Every firsthand account indicates that a woman who contributes to her family's income is more likely to have a role in

financial conversations and decisions. The men's interviews confirmed that these peaceful discussions improved overall family relations. Additionally, women expressed that by purchasing their own menstrual products rather than depending on their husband's already insufficient income, they experienced a decreased risk of menstruation-induced violence. Conclusions: As more rural women begin their own businesses (eg. buying and selling cassava, selling handcrafted clothing or jewelry, etc), this inherently shifts the traditional Ugandan family hierarchy, which deems men the sole financial beneficiary and decision-maker. In contrast, when both parties possess a personal disposable income, power dynamics are equalized—women accommodate their own hygienic needs, and thus enter financial deliberations as a contributor, instead of as a dependent. Ultimately, dismantling traditional gender roles and encouraging rural women to pursue employment improves their quality of life, in regards to GBV and menstrual equity.

### **Flourishing factors among older adults living with HIV**

Punsalan, Ali; Nguyen, Annie, L

Background: Flourishing is an important psychological concept. It refers to the optimal feeling of well-being in multiple aspects of life. Six domains of flourishing proposed are: happiness and life satisfaction, good physical and mental health, meaning and purpose, character and virtue, close social relationships, and financial and material security. OALWH are a unique group because the focus for HIV care has shifted to that of a manageable, chronic condition. Yet, many OALWH are also long-terms survivors who have had to learn how to psychologically shift from surviving to thriving with HIV. Methods: In this study, we 1) examined the prevalence of the 6 "flourishing" factors among a group of older adults living with HIV, and 2) determined the factors that drive overall flourishing. Cross-sectional, survey data (N=102; people living with HIV ages

50+) are from participants recruited through community samples. Descriptive summaries and backward elimination linear regression models were utilized. Results: Participants were racial/ethnically diverse (15.5% Hispanic/Latine, 25.2% Black) with a mean age of 62.04; 74.8% were men; 53.4% had college or higher education; 92.2% reported undetectable viral load. Overall flourishing was relatively high (mean=45.32, possible range [PR]= 8-56). Self-rated successful aging was high (mean=7.11, PR= 2-10) but only 37.9% rated their health as excellent/very good. Participants had higher mean positive affect compared to negative affect (34.63 vs. 16.79). Resilience (mean=17.3, PR= 6-30), optimism (mean=16.51, PR= 0-40), and instrumental support (mean=18.55, PR= 8-40) scores were moderate to low, and 26.2% said they had financial hardships. After adjusting for demographics, regressions with flourishing as the outcome showed resilience, instrumental support, positive affect, and optimism were positively associated with flourishing ( $p's \leq .05$ ). Conclusion: Although general flourishing scores were relatively high, greater variation was seen in the 6 domains highlighting areas to target in psychological/behavioral interventions to improve for healthy aging among OALWHA.

### **Implementing a workplace smoking cessation program in the construction sector: A pre-implementation assessment of tobacco use among construction workers in South Florida**

Oluwole, Olusanya, J; de Dios, Roxana; Lee, David; Salloum, Ramzi; LeLaurin, Jennifer, H; Laine, Jennifer; Pradhananga, Nipesh; McCollister, Kathryn; Bursac, Zoran; Asfar, Taghrid

Background Construction workers in the US bear a disproportionate burden of tobacco-related health consequences due to their exposure to workplace toxins, which significantly elevate the risk of smoking. As part of a project aimed at implementing and testing a smoking cessation program in the

construction industry in South Florida, we conducted a pre-implementation tobacco use assessment among construction workers. Objective This study aims to examine tobacco use among construction workers in South Florida to guide the smoking cessation program implementation. Method Between May and September 2024, we conducted a cross-sectional survey of 336 construction workers from 8 companies in South Florida. In collaboration with the construction site's safety managers, interviewers administered structured questionnaires to collect the data, which were then analyzed descriptively. Results The average age of participants was  $40.98 \pm 12.98$ . The majority were Hispanics (97.2%), men (96.2%), and foreign-born individuals (81.9%), of which 92.5% had low acculturation. Overall, 24.6% of participants were current cigarette smokers with an average age of initiation of  $16.69 \pm 4.82$  and  $9.34 \pm 9.04$  cigarettes per day. Other tobacco product use was higher than the general population (6.4% e-cigarette, 6.4% smokeless/chewing tobacco, 6.9% dual cigarette and e-cigarette users). Risky alcohol drinking was reported among 25.3% of workers. Among current cigarette smokers, 16.2% showed high nicotine dependence, 49.1% attempted to quit before, and 69.4% were interested in quitting. Conclusion Cigarette smoking among construction workers in South Florida remains high, mainly affecting foreign-born Hispanic workers. To facilitate program implementation, the smoking cessation intervention should be available in Spanish, and interventionists should be bilingual. Additionally, other tobacco use products and alcohol drinking should be addressed in the intervention due to their interaction with smoking.

### **From Research to Implementation: Ethical Approaches for Supporting College Students in Alcohol Use Studies**

Montemayor, Benjamin, N; Hassan, Arham

Introduction: Substance use research often prioritizes future implementation over participants' immediate well-being, a troubling approach given the high rates of substance use among college students. This study explores the ethical considerations and perspectives of U.S. college students at low- and high-risk of an Alcohol Use Disorder (AUD) about participating in alcohol use research. Methods: Data was collected from full-time U.S. undergraduates (aged 18–22) who met the criteria for either "low risk" ( $<8$ ) or "high risk" ( $\geq 8$ ) of an AUD as determined by the Alcohol Use Disorder Identification Test. Participants provided information on demographic characteristics, alcohol use, perceived risks and benefits of research participation, emotional and cognitive responses to learning about potential AUD risk, and willingness to participate in research with behavioral health referral procedures. Results: Results highlight that high-risk students expressed significantly higher concerns about the social implications of participating in such research compared to their low-risk counterparts, with 57% worried their interpersonal circle might believe they have a drinking problem. Additionally, high-risk students showed greater concern about research findings being misinterpreted and a heightened sensitivity to finding out they may be at risk of an AUD. However, high-risk students also demonstrated more trust in the research results than low-risk participants with 65.9% reporting they would trust the study findings. Additionally, this trust was associated with willingness to participate in future research with referral procedures. Conclusion: The findings highlight the importance of incorporating ethical practices that prioritize participant perspectives. High-risk students' heightened concerns call for participation methods that minimize social stigma and data misinterpretation. This study

underscores the need for research designs that account for the unique vulnerabilities of student populations, ensuring their emotional and social well-being throughout the research process. Implementing these practices requires clear guidelines and staff training to support a participant-centered research approach.

### **Evaluating the Impact of Mental Health First Aid Training on Participants' Mental Health and Psychosocial Well-Being**

Sheehan, Brynn, E.; Prasanna, Cassandra; Bedingham, Elizabeth

**Purpose:** One in five U.S. adults live with a diagnosable mental illness. The Mental Health First Aid (MHFA) training teaches individuals how to identify, understand, and respond to signs of mental health crises, serving as the bridge between those in need and professional treatment. Little or no research has investigated whether MHFA may benefit program recipients' own mental health and psychosocial health factors. The goal of this study was to assess the effectiveness of the MHFA training with individuals who serve under-resourced communities. **Methods:** Participants (N =57) were non-profit organization staff and students from a medical school and HBCU in Southeast Virginia. Participants completed pre-surveys assessing confidence in MHFA skills, and a variety of psychosocial constructs. Following the training, participants completed surveys at one- and three-months follow-up. **Results:** Repeated measures ANOVAs compared the effects of the training over time. Results indicated significant improvements in self-efficacy, [F(2,54) = 5.66, p = .006], mental health stigma related to professional efficacy, [F(2,52) = 8.00, p < .001], self-control, [F(2,52) = 3.23, p = .04], general anxiety, [F(2,54) = 3.41, p = .04], general depression, [F(2,54) = 4.79, p = .01], and confidence in using MHFA skills, [F(1.5,58) = 23.95, p < .001]. Post hoc analyses revealed that many of the constructs followed a quadratic trend, showing improvement by Time 2, with the

effects diminishing slightly by Time 3. **Conclusions:** The MHFA training equips participants to assist others experiencing mental health challenges; results also suggest that the training is beneficial to trainees themselves. Over time, participants demonstrated significant improvements in self-efficacy, self-control, anxiety, and depression. Findings indicate that the MHFA training has a dual impact, enhancing trainees' health and well-being, in addition to the broader impact on the community. Implementing MHFA in under-resourced communities could enhance individual resilience and community-based mental health support.

### **Mental Health Diagnosis and Associations with Gabapentin Non-Medical Use among Individuals in Treatment for Opioid Use Disorder**

Buttram, Mance E.; Ellis, Matthew, S.

**Purpose:** This study examines characteristics and behaviors associated with gabapentin non-medical use (NMU) among individuals in treatment for opioid use disorder (OUD) who report anxiety and depression diagnoses. **Methods:** Data are drawn from an ongoing study examining gabapentin NMU among individuals in OUD treatment. Eligible participants are 18 years or older and report past year gabapentin NMU and past 90-day use of opioids. Participants self-reported formal diagnoses of anxiety and depression. **Results:** To date, the sample (n=66) includes participants who are Hispanic (n=9), white (n=30), African American/Black (n=17), Native American (n=9), and other race/ethnicity (n=1). Mean age is 41.7 Half the sample is female (n=32). Compared to those without a diagnosis, participants who report anxiety or depression (n=42) are more likely to report past 90 day use of methamphetamine (p=.005) and fentanyl laced with xylazine (p=.026), greater overdose frequencies (p<.045), higher treatment motivation scores (p<.007), gabapentin NMU for recreational and therapeutic purposes (p<.025), as well as

less likely to report gabapentin NMU strictly for therapeutic purposes ( $p < .057$ ).  
Conclusions: Treatment professionals and clinicians should screen for mental health diagnoses and monitor gabapentin NMU as part of OUD treatment to mitigate negative consequences (e.g., relapse; overdose) and increase likelihood of positive mental health treatment outcomes.

**Formative assessment to inform implementation of a clinical-community intervention to address pediatric obesity in rural South Carolina**

Meggett, Kinsey; Griffin, Sarah F.

Purpose: This study aims to 1) assess the need for a family healthy weight program (FHWP) in rural South Carolina (SC), 2) evaluate local capacity to develop a clinical-community partnership for intervention delivery, and 3) analyze results to inform provider behavior change for implementation. Methods: We utilized statewide Medicaid claims data and conducted stakeholder interviews in rural SC to inform the expansion of FHWP, an evidence-based, clinical-community intervention for promoting health behavior among children and families. Data was analyzed for patients with weight-related diagnoses in SC from 2018-2022 ( $N=171,745$ ). Adjusted logistic regression examined associations between patient characteristics and receiving dietary counseling at well-child visits. Additionally, we interviewed parents, school nurses, recreational staff, and pediatric healthcare providers ( $N=21$ ) to examine existing programs and implementation capacity for FHWP. The Exploration, Preparation, Implementation, Sustainment (EPIS) framework was employed to identify opportunities and barriers to implementing a referral-based FHWP. Results: Exploration: Overall, 28.3% of patients received dietary counseling at their well-child visits. Children who were overweight had 11.6% lower odds of receiving dietary counseling, while those who were obese had 10.9% higher odds

compared to children with a healthy weight. Preparation: Interviews revealed interest in family-focused healthy lifestyle programs, but a lack of existing programs or referral process. A referral process must be developed prior to implementation. Implementation: FHWP will expand to representative counties January 2025, focusing on training providers on clinical referral processes and/or ability of a family to self-select into FHWP with provider approval. Sustainability: Building clinical-community partnerships will enable providers to refer patients to community programs and promote sustainable health behaviors. Further, providers may increase billing of health promotion treatments in clinic. Conclusions: Ongoing evaluation will guide training and improve provider referral patterns, expanding access to evidence-based, clinical-community programs to prevent and address obesity in rural SC.

**Family Resilience Among Families Experiencing Homelessness and Housing Instability: Perspectives of Parents/Caregivers and Service Providers**

Ruiz, Yumary; Kimiecik, Carlyn; Moser, Madeline; Haddow, Kelly; Craig, Maggie; Brown-Krapf, Katie; Rodriguez, Natalia, M

Background: Research on homelessness tends to focus on individuals rather than families, limiting our understanding of the dynamics within families experiencing homelessness and housing instability (FEH/HI). This creates a knowledge gap related to this vulnerable population. Among the limited research, a deficit approach that focuses on the deficiencies of families is more common than a strengths-based approach that draws on individual and community assets. One such asset is family resilience, a family's capacity to rebound from adversity, which has been found to shield families from crisis and emerge strengthened. Purpose: This Community-Based Participatory Research study used Froma Walsh's Family Resilience

Framework (FWFRF) to understand family resilience to inform programming that fosters family resilience among FEH/HI. We compared and contrasted perspectives from parents/caregivers and organizational providers across 3-domains and 9-processes. Methods: Parents/caregivers (n = 17, Mage = 31, 88% mothers) and organizational providers that serve FEH/HI (n = 15) participated in semi-structured interviews. Data was thematically analyzed using apriori categories from FWFRF, and a comparative analysis was employed to identify similarities and differences in group perspectives. FWFRF was used to deductively interpret the data. Results: Both groups reflected all framework domains (shared belief systems, organizational processes, communication/problem-solving processes) and six processes within those domains, including making meaning of adversity, positive outlook, flexibility, connectedness, mobilizing social and economic resources, and collaborative problem-solving. Three processes were unique to and discussed only by parents/caregivers: transcendence and spirituality, clarity, and open emotional sharing. There were no processes unique to service providers. Conclusions: While alignment across some processes existed, differences in perspectives highlight the need to tailor support and programs for FEH/HI. By identifying the strengths and adaptive strategies of FEH/HI from key perspectives and aligning with a modularized framework, findings can inform the development and implementation of interventions to foster and promote resilience among FEH/HI.

### **Kratom brands in a national sample of vape shops across the US**

LoParco, Cassidy, R; Tillett, Kayla, K; Berg, Carla, J; Rossheim, Matthew, E

Introduction: Kratom is a federally unregulated substance that is derived from the *Mitragyna speciosa* tree and interacts with the opioid receptors in the brain. Kratom

products are often marketed as an opioid alternative and as a product that influences perception, mood, and other physiological responses. The use of kratom products is associated with several negative consequences including gastrointestinal and liver disorders, and products are often untested for contaminants. Despite rising prevalence, the literature is notably lacking information on popular kratom brands – which assists in understanding specific risks, marketing practices, and major industry stakeholders. Methods: Using Google Maps, we systematically compiled a list of US vape shops in each state, Washington DC, and Puerto Rico near the largest commercial airport and the capitol building in each state/territory. Locations were called in November/December 2023, were asked if they sold kratom and, if so, what brands they sold; 661 stores were called to achieve our target sample of 520 (n=10 per state/territory). Brands were independently dual-coded. Results: 372/520 (71.5%) shops sold kratom. Among these, 153 (41.1%) provided brand information: 129 different kratom brands were mentioned across a total of 687 times (average=2.28 brands/shop; maximum=10). Most brands (n=103) were mentioned by less than 5 locations. The top 5 brands were: OPMS (90.20% of retailers that mentioned at least one brand), Remarkable Herb (34.64%), MIT 45 (33.33%), Krave (20.26%), and Earth Kratom (18.30%). Discussion: This study is the first to provide a systematic examination of kratom brands sold in vape shops across the US. Results indicate numerous brands, which suggests substantial market competition among producers. However, findings also suggest that certain brands (e.g., OPMS) are gaining dominant positions in the market. Understanding these dynamics is critical for informing regulations needed to protect consumer safety and anticipating which companies will likely strongly oppose effective federal regulations.

### **Correlates of derived psychoactive cannabis product knowledge, use, and use intentions among US young adults**

LoParco, Cassidy, R; Rossheim, Matthew, E; Cui, Yuxian; McCready, Darcey, M; Wang, Yan; Yang, Y. Tony; Cavazos-Rehg, Patricia, A; Berg, Carla, J

**Introduction:** Derived psychoactive cannabis products (DPCPs) are chemically synthesized and intoxicating. Despite their widespread use, factors associated with DPCP use remain largely unknown. **Methods:** We analyzed 2023 survey data among 4,031 US young adults, with 48.9% reporting past-month use of cannabis (per study design) and 24.4% DPCPs. Latent class analysis was used to assess profiles of DPCP knowledge (based on 2 questions regarding their effects and 3 questions related to their regulations). Multinomial logistic regression examined sociodemographics in relation to DPCP knowledge class; and multivariable logistic and linear regressions examined sociodemographics and DPCP knowledge class in relation to past-month DPCP use and future use intentions, separately. **Results:** DPCP knowledge classes were: 'all correct' (20.5%), 'mostly incorrect' with common errors pertaining to regulations (36.9%), 'mostly unsure' (reported 'don't know' to the 3 regulation-related items; 21.9%), and 'all unsure' (reported 'don't know' to all items; 20.7%). In multinomial logistic regression using 'all correct' as the reference, racial/ethnic minority status was associated with 'mostly incorrect' (Black vs. White: aOR=2.49, 95%CI=1.77,3.50; Asian vs. White: aOR=2.13, 95% CI=1.45,3.12; Hispanic vs. not: aOR=1.38, 95%CI=1.03,1.85) or 'all unsure' (Black vs. White: aOR=1.55, 95%CI=1.04,2.31; Asian vs. White: aOR=1.56, 95%CI=1.03,2.37). Those in the 'all unsure' vs. 'all correct' class had lower odds of past-month DPCP use (aOR=0.45, 95%CI=0.32,0.62) and had lower use intentions (B=-0.33, 95%CI=-0.55,-0.11). Other correlates of DPCP use and use intentions included living in a state

where non-medical cannabis was illegal and past-month cannabis or CBD use. **Conclusions:** White participants were more knowledgeable of DPCPs; despite correctly knowing that DPCPs lacked regulations, participants in the "all correct" knowledge class had higher odds of DPCP use and higher use intentions. The widespread misinformation documented in the current study further underscores the importance of ongoing surveillance and public health efforts to ensure consumer safety.

### **Associations between cannabis messaging and derived psychoactive cannabis product perceptions, use, and use intentions among US young adults**

LoParco, Cassidy, R; Rossheim, Matthew, E; Cui, Yuxian; McCready, Darcey, M; Romm, Katelyn, F; Wang, Yan; Yang, Y. Tony; Cavazos-Rehg, Patricia, A; Szyk, Hannah; Kasson, Erin; Berg, Carla, J

**Aims.** We assessed traditional cannabis messaging exposure in relation to derived psychoactive cannabis product (DPCP) perceptions, use, and use intentions. **Methods.** We analyzed 2023 data among 4,031 US young adults (Mage=26.3, 59.8% female, 3.51% racial minority, 19.4% Hispanic), with 48.9% reporting past-month cannabis use (by design) and 30.6% past 6-month DPCP use. Multivariable regressions examined past 6-month cannabis risk and ad messaging exposure by source (cannabis stores, online, direct communication, billboards/posters/flyers, TV/movies/radio, print) in relation to: 1) perceived DPCP addictiveness and harm, 2) past 6-month DPCP use, and 3) DPCP use intentions (among those reporting nonuse). **Results.** Risk messaging exposure via cannabis stores was associated with higher perceived DPCP harm (B=0.26, 95%CI=0.11,0.41), but also DPCP use (aOR=1.37, 95%CI=1.14,1.65) and intentions (B=0.14, 95%CI=0.02,0.26). Online risk messaging exposure was associated with higher perceived DPCP addictiveness (B=0.20, 95%CI=0.04,0.36) and harm (B=0.25,

95%CI=0.10,0.40). Risk messaging via billboards/posters/flyers and TV/movies/radio was associated with higher perceived DPCP addictiveness ( $B=0.18$ , 95%CI=0.01,0.35) and nonuse ( $aOR=0.77$ , 95%CI=0.63,0.95), respectively. However, risk messaging via direct communication was associated with greater odds of DPCP use ( $aOR=1.44$ , 95%CI=1.17,1.78). Ad exposure online and via direct communication were associated with DPCP use ( $aOR=1.39$ , 95%CI=1.12,1.73 and  $aOR=2.24$ , 95%CI=1.86,2.70 for online and direct communication, respectively), higher use intentions ( $B=0.17$ , 95%CI=0.03,0.30;  $B=0.30$ , 95%CI=0.17,0.43, respectively), and lower perceived harm ( $B=-0.24$ , 95%CI=-0.40,-0.07;  $B=-0.30$ , 95%CI=-0.46,-0.15, respectively); direct communication ad exposure was also associated with lower perceived addictiveness ( $B=-0.36$ , 95%CI=-0.52,-0.20). Print ad exposure was associated with higher use intentions ( $B=0.18$ , 95%CI=0.03,0.34), but also higher perceived addictiveness ( $B=0.28$ , 95%CI=0.09,0.47) and harm ( $B=0.22$ , 95%CI=0.04,0.40). Ad exposure via billboards/posters/flyers was associated with DPCP nonuse ( $aOR=0.75$ , 95%CI=0.62,0.91). Conclusions. Some associations that were similar for cannabis/DPCPs may stem from overgeneralization, while some distinct associations may suggest that consumers interpret certain messages (e.g., risk-related) to promote DPCPs and/or to indicate that DPCPs may be less risky.

### **Building Trust: Effective Healthcare Information Dissemination Strategies for Mobile Wellness Units in Rural Communities**

Chen, Xuewei; Palipogu, Susanna, K.; Njoroge, Rose, W.; Hu, Tao

Introduction: Mobile Wellness Units (MWUs) play a vital role in delivering healthcare to underserved rural populations. However, many MWUs remain underutilized due to gaps in communication. Effective

dissemination strategies are crucial to ensuring that local residents are informed about available services. Purpose: This study compares the dissemination strategies used by MWUs to promote their services with how residents hear about local healthcare services. Methods: We conducted one-on-one semi-structured interviews with 30 residents of rural counties in Southwest Oklahoma and seven MWUs staff/supervisors between April and September 2023. The interviews explored the strategies MWUs use to disseminate healthcare information and how residents learn about healthcare services. Thematic analysis was applied to identify similarities and differences in communication methods and preferences between the two groups. Results: MWUs primarily employed formal strategies, including distributing flyers through local businesses, schools, city halls, and community centers. They also used local radio, TV stations, banners, and signage to advertise their services. Partnerships with tribal health clinics, businesses, and local organizations were key to extending their outreach. In contrast, residents, particularly older individuals, relied more on informal networks and word of mouth through social settings such as meal sites, coffee shops, and local gatherings to learn about healthcare services. Although Facebook was frequently used, residents expressed frustration over inconsistent information and the absence of centralized, reliable sources. Many residents reported that flyers were useful when posted in libraries and community centers, but they also noted a preference for receiving healthcare information directly from trusted individuals rather than through formal advertisements. Discussion: MWUs could improve their outreach by expanding direct communication efforts, such as recruiting local influencers and community members who have benefited from MWUs services to share their experiences at popular gathering sites. Leveraging personal recommendations and fostering trust could strengthen engagement and increase utilization of MWUs.

### **Health Information-Seeking in the Age of AI: A mixed-Method Study Comparing Google and ChatGPT**

Chen, Xuewei; Waits, Cameron; Pogue, Anna; Li, Ming; Kreps, Gary, L

**Introduction:** Artificial intelligence (AI) models introduce new dynamics to health information-seeking and decision-making. However, efficiency and user-experience of AI tools for health information-seeking remain largely unexplored. **Methods:** In April-June 2024, we conducted a mixed-method study among 30 college students comparing health information-seeking using Google and ChatGPT3.5. We employed eye-tracking technology, pre- and post-knowledge tests about stress-management and HPV/HPV vaccination, retrospective think-aloud methodology, and semi-structured interviews. Participants' health literacy levels were measured using CDC-developed survey questions. All participants had 1.5 minutes to use Google and ChatGPT for each topic, with the order counterbalanced. We performed paired t-tests to examine knowledge gained from this information-seeking experiment. We also conducted regression analysis and qualitative analysis using interview and eye-tracking data to explore influences of health literacy on knowledge-change and information-seeking. **Results:** Our sample comprised 24 women and 6 men aged 18-22 years ( $M=20$ ,  $SD=1$ ). Most were familiar with stress-management but knew little about HPV/HPV vaccination. Participants' HPV/HPV vaccination knowledge scores increased significantly after the experiment ( $t(28) = 5.09$ ,  $p<.0005$ ), while stress-management knowledge did not change significantly. Eye-tracking gaze plots and scan paths data revealed different information-seeking patterns based on health literacy levels. Low health literacy participants focused on sponsored websites in Google searches and skimmed ChatGPT responses, while those with adequate health literacy selected authoritative sources and read ChatGPT responses thoroughly. Most

participants expressed positive experiences with ChatGPT, citing its efficiency and easy-to-follow formatting, particularly those with low health literacy. However, some questioned the reliability of ChatGPT-generated information due to lack of sources. **Discussion:** Findings highlight the potential of AI-powered tools like ChatGPT for health information-seeking. The structured and concise nature of ChatGPT responses appears more accessible compared to traditional search engines. However, concerns about the reliability of AI-generated information underscore the need for critical evaluation skills in the digital health information landscape.

### **Barriers to implementation of standardized ventilator-weaning protocol: implications for translational research**

Ezenwukwa, Chibundum; Bartolome, Sonja

**Background:** The implementation of evidence-based practice in healthcare is crucial, but adherence to protocols is often subpar, despite well-documented evidence of improved patient outcomes. As part of a larger quality improvement initiative at a large academic medical center, this study aims to explore the barriers to completion of an evidence-based ventilator-weaning protocol. **Methods:** We qualitatively studied protocol performance in a sample of ICU nurses and respiratory therapists using a survey that consisted of 27 questions on a five-point Likert scale with additional prompts for comments. The survey addressed participants' knowledge and attitudes toward the protocol and challenges preventing protocol compliance. Descriptive statistics and inductive thematic analysis were used to summarize responses. Frequencies and proportions were expressed as a percentage of total respondents. **Results:** The survey yielded fifty-two responses. 85% of participants responded positively to prompts regarding protocol knowledge, and 43% of participants responded positively to prompts regarding protocol attitudes. The survey

yielded 44 comments describing barriers to completion which were divided into 7 themes: protocol incompatibility (n=16), protocol buy-in (n=11), timing (n=6), documentation (n=4), interdisciplinary communication (n=3), lack of knowledge (n=2), and other concerns (n=2). The most common barriers identified were 1) protocol steps not applicable to all eligible patients, 2) difficulty with buy-in to the protocol, and 3) protocol increasing staff workload. Conclusion and relevance: Participants demonstrated sufficient knowledge and understanding of the protocol, but attitudes were poor, and several barriers to implementation were identified. These findings are consistent with previous literature suggesting that knowledge of evidence-based practice does not sufficiently predict protocol compliance. In addition, we found that attitudes of the group toward the practice play a significant role in the success of its implementation. Using this data, we plan to address these barriers in hopes to improve protocol adherence and thus, patient outcomes.

### **Parents as Sources of Challenges and Protection for Korean American College Students**

Wang, Jingyi; Yuan, Shuhan; Funk, Clara; Lee, Joanna; Xu, Xuele; Bhuti, Tenzin

**Purpose** It is often assumed that once students turn 18 and enter college, parental influence diminishes. Consequently, the role of parents on college students has been understudied. This study aims to examine how parents may impact the mental health and well-being of college students. **Methods** Survey data were collected from 415 full-time undergraduate students in the United States who self-identified as Korean American (193 females, mean age 20). Perceived reciprocal trust with parents, conflict likelihood with parents, and depressive symptoms were measured using the Trust subscale of the Inventory of Parent and Peer Attachment, the Asian American Family Conflicts Scale, and the Center for Epidemiologic Studies

Depression scale. Cronbach's alpha for all scales exceeded 0.73. Semi-structured interviews were conducted with 31 survey respondents. The Phenomenological Variant of Ecological Systems Theory (Spencer et al., 1997) guided the deductive analysis. **Results** Regression analysis revealed that perceived reciprocal trust with parents was associated with lower depressive symptoms, while conflict likelihood with parents was associated with increased depressive symptoms, controlling for age, gender, socioeconomic status, and GPA. **Qualitative findings** highlighted the significant role parents play, particularly as students navigate challenges related to their ethnic-racial identity, with parental influence emerging as a key theme and accounting for over 20% of the codes. Depending on the quality of trust and communication, parents were both possible sources of challenges and protection for the mental health and well-being of Korean American students. **Conclusions** Both quantitative and qualitative findings indicate that, for Korean American college students who are at the developmental stage of emerging adulthood, parents continue to play a crucial role. Future research is needed to determine whether these findings are generalizable to other Asian American or racial-ethnic minority groups and to explore ways to foster trust and healthy communication between parents and their emerging adult children.

### **Gunowner demographics and state gun law rankings as predictors for attitudes related to gun safety policy: data from the 2021 National Firearms Survey**

Robbins, Christopher

**Background** Demographics and geographic location could affect gunowners attitudes related to gun safety policies. The objective was to evaluate differences in gunowners attitudes and ownership trends based on demographics and state-based location. **Methods** A retrospective review of publicly available data from the 2021 National Firearms Survey (N=16140) was analyzed

using logistic regression models. Dependent variables were attitudes regarding travel to states with magazine capacity bans (model 1), attitudes regarding travel to states with 'assault weapons bans' (model 2), ownership of high-capacity magazines (model 3) and assault weapons (AW) ownership (model 4). Independent variables included age, gender, income, race, and state ranking for gun safety laws based on the Giffords Law Center rankings stratified to 'more or less restrictive gun laws'. Results Respondents were 58.6% male, aged 26-45 (43.5%), Caucasian (86.6%), with 51.7% earning \$31K-\$100K. Travel to states with magazine restrictions were viewed negatively by 53.9% and travel to states with assault weapon bans (AWB's) was negative among 45.9%. High-capacity magazines were owned by 48% with 30.2% indicating AW ownership. Demographics were significantly associated with attitudes related to travel to states with magazine and AWB's among younger, higher earning, males (all  $p < .001$ ). Predictors for ownership of high-capacity magazines included age (adults 26-45), higher income, male gender, non-white race (all  $p < .001$ ), and state gun laws ( $p = 0.028$ ) but this was non-significant as a univariate variable ( $p = .084$ ). Demographic predictors were similar for ownership of AW's, except race ( $p = .223$ ) and state gun laws ( $p = .057$ ) had no effect on ownership. Conclusion Demographics can be important predictors for potential ownership of high-capacity magazines or AW ownership. State gun laws did not seem to be a strong predictor for effecting ownership of high-capacity magazines or assault weapon ownership which may have broader policy implications.

### **Nicotine and cannabis use patterns among a diverse adolescent population**

Collins, Stephanie; Rojas, Mikaela; Rivera-Guevara, Maria; Shanazari, Eric; Forster, Myriam

Background: Adolescent use of nicotine and cannabis products, including dual use, has become increasingly prevalent, raising public

health concerns about respiratory issues, evolving nicotine and cannabis product market, and risk of addiction. Despite increased research attention on youths' nicotine and cannabis use, few studies have investigated the influence of developmental assets (DAs) (strengths and support in the personal, social, family, school, and community domains) in adolescents' nicotine and cannabis use patterns. This study examined the association between DA scores and nicotine and cannabis use, including dual use, among a diverse sample of high school students. Methods: Data are survey responses ( $N = 1,973$ ) from diverse high school students enrolled in a school-based study investigating risk and protective factors for mental and behavioral health outcomes. Multinomial regression models tested the hypothesized association between DA scores and nicotine, cannabis, and dual product use, adjusting for age, sex, ethnicity, poverty status, and state. Results: On average, the sample was 16 ( $SD = 1.8$ ) years old; 52% were female, 30% identified as Hispanic, 25% as non-Hispanic White, 20% as African American, 15% as Asian/Pacific Islander, and 10% as Multiethnic. Every unit increase in family DA scores was associated with lower risk for nicotine product use ( $RRR = 0.96$ , 95%CI: [0.92, 0.99]) while higher social competency scores were associated with reduced risk for cannabis product use ( $RRR = 0.92$ , 95%CI: [0.86, 0.98]). Higher personal DA scores ( $RRR = 0.90$ , 95%CI [0.85, 0.95]) and family DA scores ( $RRR = 0.96$ , 95%CI [0.93, 0.99]) were associated with reduced risk of dual product use (nicotine + cannabis). Conclusion: Robust DAs, particularly in the personal, family, and social domains, lower the risk of nicotine and cannabis product use, especially dual product use. Future research should continue to explore the interplay of individual, familial, and contextual factors to inform the development of effective prevention strategies.

### **Tobacco 21 Policies on Youth Tobacco Use: A Systematic Review and Meta-Analysis**

Danyi Li; Shiyong Wu; Steve Sussman; Mary Ann Pentz

**Introduction:** Tobacco 21 (T21) policies, which raise the minimum legal age for purchasing tobacco products to 21, have been implemented at local, state, and federal levels in the United States between 2005 and 2019. These policies aim to reduce tobacco use among adolescents and young adults, but their effectiveness across policy levels and different demographic groups remains unclear. This study systematically reviews and performs a meta-analysis to assess the impact of T21 policies. **Methods:** We screened articles from 13 databases, following the PRISMA checklist and PICOS criteria. Two researchers independently screened the studies, searching 9 databases, including PubMed and Web of Science, and 4 grey literature sources. Standardized information abstraction forms and study quality assessment tools were used. Inverse variance-weighted random-effect meta-analysis models were used to assess the pooled odds ratios of tobacco use. Moderation analyses were done on policy levels, proportion of participant gender, and race/ethnicity. **Results:** Of the 24 studies included, 19 were repeated cross-sectional, 3 were longitudinal, and 2 included both study designs; 21 were peer-reviewed journal articles, 2 were dissertations, and 1 was a working paper. Meta-analyses show that although statistically non-significant, T21s were associated with lower pooled odds of past-30-day use of cigarettes (OR = 0.92) and chewing tobacco (OR = 0.89) but with higher odds of e-cigarette (OR = 1.32) and cigar use (OR = 1.03), compared to areas without T21 and pre-T21 period. Moderation analyses revealed that for studies on federal and studies with < 50% female participants, the pooled odds of past-30-day cigarette use were significantly lower. **Conclusion:** We found a lack of statistically significant overall pooled effects of T21s on

various tobacco product use outcomes. Policy level (i.e., national versus state) and gender proportion in studies were related to the T21 effect. The results highlight the complexity of T21 policy implementations.

### **Policy and Structural Racism on Individual Harm Reduction Behaviors: Using Individual Level Theories to Guide Policy Level Decisions**

Satterfield, Naomi Carmen; Seo, Dong-Chul

**Purpose** We examine how the interaction of overdose Good Samaritan Laws (GSLs) and structural racism in the legal system impacts the harm reduction choices of Black lay responders after an opioid overdose. **Methods** We analyzed 50 interviews using Directed Content Analysis. Participants were Black residents of four Indianapolis zip codes chosen due to their high rate of opioid overdose deaths and Black population compared to the rest of the city. Using the Health Belief Model, we investigate the relationship between perceived barriers and benefits and participant perceptions and experiences of and with police. We used Associational Legal Epidemiology to examine Indiana's GSL and its parameters while considering race-based criminalization outcomes and the interview analysis to infer how policy decisions contribute to harm reduction behaviors. **Results** Most participants perceived high barriers related to fears of criminalization and police brutality which, with perception of low benefits, contributed to thought that calling 911 is not worth the risk. Participants who experienced helpful police encounters expressed high perception of benefits, making calling more feasible even if the risk of criminalization was high. Indiana GSL's lack of protection against parole/probation violations or arrest perpetuates legislative structural racism. Black people are more likely to be on parole/probation, making violations at an overdose scene a plausible scenario. **Conclusions** Features of Indiana's GSL perpetuate race-related overdose mortality disparities by limiting protections, failing to

make calling 911 after an overdose an option in which the benefits outweigh barriers in the Black community. Our interviews demonstrate that participants' perceptions of benefits to calling 911 increase after witnessing a helpful police encounter. Policies that aim to increase the likelihood of utilizing 911 should be written to facilitate an environment that prioritizes lifesaving measures.

### **Disease-Related Symptom Profiles of Black and Hispanic Men with Chronic Conditions**

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**Background:** Individuals with one or more chronic conditions face a higher risk of experiencing persistent, co-occurring symptoms. The objectives of this study were to identify: (1) distinct symptom profiles among non-Hispanic Black and Hispanic men with one or more chronic conditions; and (2) clinical characteristics and modifiable factors associated with symptom profile membership. **Methods:** Data were analyzed from a non-probabilistic national sample of non-Hispanic Black and Hispanic men ( $\geq 40$  years old) with one or more self-reported chronic conditions ( $n=1,982$ ), who completed an internet-based survey. Latent class analysis was used to identify the patient subgroups based on their self-reported severity of five disease-related symptoms (i.e., pain, fatigue, shortness of breath, sleep problems, and depressive symptomatology). Three distinct groups were identified as the least severe (63.4%), moderate (13.9%), and most severe (22.7%) symptom profiles. Multinomial logistic regression was used to identify modifiable factors related to symptom profile membership. Modifiable factors included weekly alcohol consumption, monthly tobacco use, monthly cannabis use, disease self-management efficacy, and social disconnectedness. Covariates included age, race/ethnicity,

education, marital status, living arrangement, household income, rurality, comorbidities, and number of daily medications. **Results:** Men in the most severe symptom profile were younger ( $OR=0.98$ ,  $P<0.001$ ), had lower household incomes ( $OR=0.95$ ,  $P=0.028$ ), and demonstrated lower disease self-management efficacy ( $OR=0.93$ ,  $P<0.001$ ) compared to those in the least severe symptom profile. They were also more likely to have 3+ chronic conditions ( $OR=1.92$ ,  $P=0.001$ ), take more medications ( $OR=1.09$ ,  $P=0.012$ ), use tobacco ( $OR=1.55$ ,  $P<0.001$ ), use cannabis ( $OR=1.45$ ,  $P=0.011$ ), and experience more social disconnectedness ( $OR=1.34$ ,  $P<0.001$ ). **Conclusions:** Findings provide insights into the symptom profiles of racially and ethnically diverse men with one or more chronic conditions, highlighting the heterogeneity of symptom experiences and identifying potential modifiable factors. These results can inform the development of targeted prevention and treatment strategies to reduce symptom severity within these male subpopulations.

### **Ethnic differences in substance use knowledge and perceived health risks among diverse college students participating in the evaluation of a substance use prevention web-app.**

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**Introduction:** Two key ingredients of successful substance use prevention programming are a) increasing knowledge about substances and b) bolstering perceptions of the health risks associated with using specific substances. Delivering prevention program content to ethnically diverse student audiences can be challenging and identifying what groups experience the greatest benefits is essential for the development of effective prevention content. This study explored ethnic differences in knowledge and perceptions of the health risks associated with alcohol,

nicotine and cannabis use from baseline to 90-day follow up among diverse college students participating in iSTART, a substance use prevention web-app delivered at a southern California university. **Methods:** Students were randomized to either a 5-week web-app prevention group, comparison, or control group. Data are baseline, exit, and 90-day follow-up survey responses (N=1,066). GLMs calculated changes from baseline, exit, through 90-day follow-up in substance-related knowledge and perceived health risks associated with alcohol, nicotine, and cannabis use. **Results:** Although all students in the webapp group experienced statistically significant greater gains in knowledge and perceived health risks ( $p < .001$ ) than comparison or control groups, Hispanic, Asian, and Non-Hispanic (NH) White students had higher average gains in knowledge (~50% increase) than African American students (36% increase). NH White and Asian students reported significant increases in their perceptions of the risks associated with nicotine use ( $p < .01$ ; ~50% increase) while Black and Hispanic students did not; NH White, Asian, and Hispanic students reported significantly greater gains in perceptions of risk associated with cannabis and alcohol use (~60% increase) than Black students (~25% increase). **Conclusion:** iSTART benefited all students however, as college communities become more diverse, delivering culturally relevant and informed messaging is critical. An essential next step in the development of effective substance use prevention program material is identifying content areas that will benefit from further tailoring.

### **Digital Recruitment Challenges for Health Campaigns in West Africa**

Wianecki, Nikolas; Ofei, Leona; Wane, Deffa; Sangare, Rabiadou; Crespi, Catherine; Massey, Philip

**INTRODUCTION** Youth in West Africa face significant barriers to sexual and reproductive health (SRH) information and services. Online programs offer solutions to

bridge information gaps but recruiting participants remains challenging. This study examines social media recruitment strategies and online verification processes for an online global health campaign. **METHODS** Participants were recruited through social media advertisements for a digital SRH intervention conducted in collaboration with a local Senegalese NGO. A two-phase screening process was used to verify eligible participants and social media accounts. Eligibility criteria included the ability to speak French, being between ages 15-24, residing in Burkina Faso, Côte d'Ivoire, or Senegal, and having a Facebook account. The NGO verified profiles before participants were invited to enroll in the online SRH campaign. Quantitative data were collected during recruitment, baseline, and endline surveys, with descriptive statistics evaluating participant retention rates. **RESULTS** Of the 7,013 individuals recruited, 3,803 (54.2%) passed initial screening. Failure to provide a Facebook profile was the largest point of exclusion (1,949/7,013 or 27.8% lost). Social media privacy settings restricted the ability to verify profiles. Additional drop-off occurred due to privacy controls when inviting participants to join private Facebook groups. Ultimately, 492/7,013 (7.0%) were successfully enrolled, though 1,412/7,013 (20.1%) were verified and invited. Those aged 20-24 demonstrated higher participation rates (373/492, 75.8%) compared to younger participants aged 15-19 (119/492, 24.2%). Retention challenges were significant, with 244/492 (49.6%) participants completing both baseline and endline surveys, and 159/492 (32.3%) completing only one, despite incentives to complete both. **DISCUSSION** Social media provides access to large and diverse audiences in West Africa; however, challenges remain during verification and enrollment procedures. Multi-national collaboration was crucial for ensuring effective and culturally competent recruitment. Our findings offer insights into procedural barriers faced in digital campaigns and inform solutions for future global health behavior research.

**Association between adverse childhood experiences and mental health well-being during adulthood: An analysis of the behavioral risk factor surveillance system, 2022**

Sanyaolu, Olutosin; Asala, Adetoun; Dutta, Tapati; Olaniyan, Afolakemi; Osime, Esther

Purpose: To design effective adult mental health interventions, it is crucial to assess mental health outcomes among the former in the context of their retrospectively self-reported adverse childhood experiences (ACEs) and sociodemographic factors. Methods: Using the 2022 Behavioral Risk Factor Surveillance System (BRFSS) publicly available data (4,45,132 U.S. adults), we employed Chi-square tests and logistic regression to examine the association between cumulative and individual ACEs, sociodemographic factors, and mental health outcomes, including self-reported diagnosis of depressive disorders (DD) and poor mental health days within the past 30 days. Results: One-fifth of the respondents (20.6%) reported having depressive disorders (DD). Over a quarter (26.8%) of survey respondents reported 1-13 poor mental health days. Approximately 23% of respondents reported at least one ACE, a similar percentage reported two or three ACEs (22.0%), and 21.8% reported  $\geq 4$  ACEs. Those with 2 or 3 ACEs (aOR = 3.42, 95%CI = 2.77–4.22) and  $\geq 4$  ACEs (aOR = 6.97, 95%CI = 5.47–8.86) had increased odds of DD. Females (aOR = 1.31, 95%CI: 1.13–1.53) were more likely to report up to 13 poor mental health days, while those earning  $< \$25,000$  (aOR = 1.80, 95%CI: 1.41–2.30) were more likely to report DD. Regarding individual ACEs, 37.9% experienced verbal abuse, 28.5% reported physical abuse, and 24.2% lived with an alcoholic during childhood. A significant association was found between all individual ACEs and depressive disorders ( $p < .0001$ ). Conclusions: Depressive disorders are common among US adults with early childhood adverse experiences, disproportionately affecting women, and are

deeply linked to harmful environments such as living with an abusive parent or an alcoholic. Trauma-informed, community-engaged, and gender-responsive combination intervention strategies are crucial to mitigate the issue and foster resilience among the affected populations.

**Are Experiences of Sexual Orientation Discrimination Linked to Substance Use Intentions in Pre-Adolescence? A Longitudinal Examination**

Ou, Tzung-Shiang; Wong, Su-Wei; Yang, Meng; Yuan, Jiaqi; Lin, Hsien-Chang

Background: Substance use during adolescence is a growing public health concern, with early initiation linked to various negative developmental and health outcomes. Although the literature has shown that experiences of sexual orientation discrimination are associated with increased substance use intention in most age groups. However, early emergence in pre-adolescence regarding this association is less investigated. Understanding the association between sexual orientation discrimination experiences and substance use intentions among preteens is key to early interventions that may mitigate future adverse health issues. This study aimed to investigate the association between experiences of sexual orientation discrimination and intentions to engage in substance use among pre-adolescents. Methods: The study utilized data from the Adolescent Brain Cognitive Development (ABCD) Study Release 4.0 (October 2021). It included pre-adolescents (N=10,327, ages 9-12) who participated from baseline to the second-year follow-up. Linear mixed-effects modeling was conducted to examine the associations between sexual orientation discrimination experiences and substance use intentions to use cannabis, tobacco, or alcohol, controlling for sociodemographic variables. Results: Pre-adolescents who experienced sexual orientation discrimination showed increased intentions to use cannabis, tobacco, and alcohol ( $\beta$ s:

0.04, 0.07, 0.09; all  $ps < 0.001$ ), with alcohol demonstrating the greatest magnitude of increased intention due to the experiences of sexual orientation discrimination. Conclusions: These findings reveal the significant association of sexual orientation discrimination on substance use intentions among preteens, suggesting that this impact may begin forming at a younger age than previously explored in the existing literature. The results highlight the importance of early prevention efforts for pre-adolescents who have experienced sexual orientation discrimination to address both the discriminatory experiences they face and the increased subsequent risk of substance use. Interventions addressing discrimination-related trauma and supporting mental health in this vulnerable population may be beneficial in mitigating future substance use behavior.

**Exploring the ethics of using fictitious characters on social media to share stories and emotions about the HPV vaccine: A cross-sectional study with experts in the field.**

Massey, Philip, M; Murray, Regan, M; Lo, Wen-Juo; Yudell, Michael, A

Social media has been used to promote the HPV vaccine through various strategies, including the use of stories and narratives. Understanding the ethical concerns related to the use of social media in this capacity are important. The purpose of this study was to identify ethical concerns of an HPV vaccine narrative communication intervention on social media that targets parents to influence their decision to vaccinate their child. Methods: We conducted a cross-sectional survey with researchers ( $n=41$ ) in the fields of health communication, cancer prevention, social media, and public health ethics from October to December 2021. Respondents were presented with seven fictitious, connected vignettes, or stories, that talked about the HPV vaccine. For each vignette, respondents were asked to rate the potential benefits and risk, as well as the potential for

ethical concerns of using the narrative style to share information about the HPV vaccine. Descriptive statistics summarized responses, and qualitative data were analyzed thematically. Results: On average, respondents perceived more benefits than risks when it comes to 1) using social media for health education generally and 2) using vignettes for vaccine communication. The vignettes prioritizing vaccine hesitancy, positive emotion, and health equity were seen as having the most potential benefits, while the vignettes highlighting vaccine confidence and skepticism were seen as having the most potential risk. Overall, respondents felt there were few ethical concerns – persuasion was the most common (15% of respondents) followed by deception (9%) and manipulation (8%). Qualitative data highlighted the importance of transparency and trust to avoid ethical violations and negative outcomes. Conclusion: Ethical concerns exist when using stories and narratives to share health information on social media, particularly as new online technologies make it harder to tell fact from fiction. Practical and actionable recommendations for researchers must be developed, defining a range of ethical responsibilities.

**Social Network Influence on the Acceptability of HPV Self-Collection Among Women with Cervical Cancer Vulnerability**

Mkuu, Rahma, S; Chakrabarti, Choeta; Khalil, Georges; Rivero-Mendoza, Daniela; Hall, Jaclyn; Sharma, Anu; Bruggeman, Bradley; Staras, Stephanie

Purpose: Cervical cancer remains a significant public health concern despite the availability of preventive measures such as Human papillomavirus (HPV) vaccination and early detection through screening. HPV self-collection screening represents a promising approach to enhance screening rates, particularly among populations with lower screening uptake. Black women, women with social vulnerability, and women

living with type 2 diabetes (T2D) are less likely to receive HPV screening. This study investigated the influence of social networks on the acceptability of HPV self-collection. Methods: Utilizing a cross-sectional design, we conducted interviews with 29 Black women with T2D and living in zip codes with high social vulnerability recruited from a large academic medical center in the Southeastern United States. Descriptive analysis and Fisher's exact tests were used to characterize the sample based on demographic characteristics, willingness to take the HPV self-collection test, and measures of social networks. Results: Higher scores of perceived support of HPV self-collection from social networks significantly influenced women's willingness to take an HPV self-collection test ( $p < 0.05$ ). Higher scores of the combined score of perceived support and perceived influence of HPV self-collection were significantly associated with willingness to take an HPV self-collection test ( $p < 0.05$ ). Discussion: Our study highlights the importance of considering social contextual factors beyond structural barriers when designing and implementing interventions to promote the uptake of HPV self-collection testing among underserved populations. Interventions leveraging social network dynamics may influence diffusion of uptake of HPV self-collection tests among under screened populations.

### **Social Connectedness Profiles and Psychological Distress Among Adolescents in Summer Care Programs: A Cluster Analysis Approach**

Prochnow, Tyler; Flores, Sara, A.; Curran, Laurel; Howell, Emily; Jackson, Deja, T; Patterson, Meg, S

Purpose: This study aimed to identify distinct clusters of adolescents based on their social connectedness patterns and examine the relationship between these clusters and psychological distress in the context of a summer care program. Methods: A longitudinal dual time series design was

employed with 47 adolescents aged 10-14 years attending a community-based summer care program. Social connectedness was assessed using adult and peer subscales of an adapted Hemingway Measure of Adolescent Connectedness, while psychological distress was measured using the Kessler Psychological Distress Scale (K-10). Data were collected at the start and end of an 8-week summer program. Two-step cluster analysis was used to identify distinct groups, and Welch's t-tests were conducted to compare psychological distress between clusters. Results: Two clusters emerged from the analysis: "baseline bonders" ( $n=21$ ) with moderate-low connectedness scores, and "strong socializers" ( $n=26$ ) with high connectedness scores, particularly with adults. At the start of summer, baseline bonders reported significantly higher psychological distress than strong socializers ( $M=22.46$  vs.  $M=17.38$ ,  $t(38.20)=2.21$ ,  $p=.03$ ). By the end of summer, this difference was no longer significant ( $M=19.20$  vs.  $M=18.54$ ,  $t(45.00)=0.09$ ,  $p=.92$ ). Conclusion: The study revealed that distinct social connectedness profiles among adolescents were associated with different initial levels of psychological distress. The summer program appeared to have an equalizing effect on distress levels, potentially by fostering a supportive environment that benefited all participants regardless of their initial social connectedness levels. These findings highlight the importance of promoting both peer and adult connections in summer care programs and suggest the need for targeted approaches to support adolescents with different social connectedness profiles.

### **The Mediation Pathway of Unmet Mental Health Treatment from Serious Psychological Distress to Simultaneous Alcohol and Cannabis Use and the Presence of Co-occurring Disorders among College Students**

Ou, Tzung-Shiang; LoParco, Cassidy R.; Park, Hye Jin; Low, Aubrey; Lin, Hsien-Chang

**Backgrounds:** Simultaneous alcohol and cannabis (SAC) use is a significant public health concern, particularly among college students. Despite its prevalence and associated health risks, there is limited understanding of how unmet mental health treatment mediates the association between Serious Psychological Distress (SPD), SAC use, and co-occurring alcohol and cannabis use disorders. Understanding this mediation is crucial, as it could provide insights into targeted interventions to address unmet mental health needs. This study aimed to fill this gap by examining how unmet mental health treatment mediates the associations between SPD, SAC use, and the presence of co-occurring alcohol and cannabis use disorders among college students. **Methods:** College students aged 18 to 22, drawn from the annual National Survey on Drug Use and Health (NSDUH) study collected between 2010 and 2019, were included in the study (N=44,865). Analyses utilized two distinct mediation models to examine the mediating effects of unmet mental health treatment on the aforementioned associations, while controlling for covariates and study years. The analyses were conducted using weighted Generalized Structural Equation Modeling, and the Sobel test assessed mediation effects under a linear assumption. **Results:** College students who experienced SPD tend to have higher odds of SAC use and reporting co-occurring alcohol and cannabis use disorders (Total effects: ORs=1.044, 1.032, both  $ps<0.001$ , respectively). Unmet mental health treatment mediated 31.96% and 19.21% of these associations, respectively (Indirect effects: ORs = 1.013, 1.006, both  $ps<0.001$ ; Sobel

test  $ps<0.001$ ). **Conclusions:** The results demonstrate that unmet mental health treatment mediated a significant portion of these associations, highlighting the critical need for improved mental health care access to mitigate polysubstance use and prevent the development of co-occurring disorders in the college student population. Implementing multifaceted approaches, such as enhancing awareness of mental health services, reducing stigma around seeking help, and integrating mental health support, is warranted.

### **Adverse Pregnancy Outcomes among Women who Experienced Traumatizing Intimate Partner Violence: Findings from 2023 Jordan's Population and Family Health Survey**

Myint, Wah, W; Falia, Gogoal; Ma, Ping; Montemayor, Benjamin, N; Clark, Heather, R; Smith, Matthew, L; ; ; ;

**Background:** Prior studies have shown an increased risk of adverse pregnancy outcomes for women exposed to Intimate Partner Violence (IPV) (i.e., physical, sexual, and emotional violence) during pregnancy. However, the impact of lifetime IPV on adverse pregnancy outcomes was poorly understood, especially in the Arab world where spousal violence within marriage was acceptable. This study examined adverse pregnancy outcomes among Jordanian women ages 15 to 49 years who experienced IPV in their lifetime. **Methods:** We analyzed data from married women who participated in the domestic violence module of the 2023 Jordan Population and Family Health Survey. Outcome variable was adverse pregnancy outcomes (e.g., miscarriage, stillbirth, and abortion), while the exposure variable was reporting IPV in their lifetime. Weighted descriptive analyses and a multivariable logistic regression model was conducted controlling for sociodemographic variables (age, education, place of residence, and wealth quintiles). **Results:** Of the women surveyed (N=5,495), 18.3% (n=1,007) experienced a

lifetime IPV, with 45% experienced physical IPV. Nearly a quarter (24%, n=243) reported experiencing adverse pregnancy outcomes. Logistic regression results revealed that women who experienced IPV had higher odds of adverse pregnancy outcomes (aOR=1.39, p=0.034) compared to those who did not. Compared to those aged 15-19, women aged 30-34 had higher odds of adverse pregnancy outcomes (aOR=11.36, p<0.001). Additionally, compared to women with no formal education, women with secondary education (aOR=4.60, p=0.003) were more likely to report adverse pregnancy outcomes. Conclusions: Findings highlight the urgent need to address IPV in Jordan. The increased likelihood of adverse pregnancy outcomes among women who have experienced IPV warrants further culturally appropriate family and community-level prevention efforts, including routine screening for IPV among all married women in healthcare settings. Because age and education attainment were positively associated with adverse pregnancy outcomes, greater focus on pregnancy preparedness and the importance of prenatal care is needed.

### **Improving Hospital Clinician's Comfort and Confidence in Sexual Assault Examinations: Findings from a Pre-Post Survey of a Trauma-Informed Care Program**

Myint, Wah Wah; Clark, Heather, R; Zemanek, Kim; Ward, Kayce; Mitchell, Stacey; Downing, Nancy

**Background/Purpose:** Sexual Assault Nurse Examiners (SANEs) play a significant role in addressing sexual assault (SA) survivors. The Texas Teleforensic Remote Assistance Center (Tex-TRAC) of the Texas A&M Health's Center of Excellence in Forensic Nursing implemented a trauma-informed, patient-center care program. One of the program components was SANEs' capacity building of hospital clinicians' comfort and confidence. The experienced SANE (TeleSANE) gave 24/7 guidance for assisting

the clinicians. This study evaluates changes in the comfort and confidence among hospital clinicians in the patient's examination. **Method:** Using deidentified data of the SANEs' Comfort and Confidence survey (N = 87), we performed descriptive statistics and effect size analyses separately for comfort and confidence in the following areas: practicing trauma-informed care (TIC), documenting a patient history of sexual assault, identifying anogenital anatomy, documenting injuries, and collecting evidence. **Results:** In the pre-session, more than half of the participants reported being comfortable/very comfortable in three areas: practicing TIC (59%, n = 49), documenting patient history (51%, n = 43), and documenting injuries (57%, n = 48). In the post-session, the percentage of participants reporting comfort/very comfortable in all areas increased, ranging from 79% (n = 67, documenting a patient history of sexual assault) to 88% (n = 75, practicing TIC). More than 90% (n = 79) of participants reported confident/very confident in practicing TIC, followed by 83% (n = 72) in documenting injuries. Cohens' d effect size was 0.87 for comfort score and 1.44 for confidence score, illustrating that the effect of changes in comfort and confidence level is huge. **Conclusion:** Findings suggest that implementing the capacity building for clinicians are critical in improving comfort and confidence levels leading to a better-quality care practice. Consistent support could lead to hospital clinician's comfort and confidence in patient care, which could subsequently lead to retention in the program.

### **A person-centered examination of food insecurity, mental Health, and well-being among college students**

Chow, Angela; Yuan, Shuhan; Wang, Jingyi

**Purposes** This study aimed to (1) identify distinct food insecurity profiles in college students based on the severity and characteristics of their experiences, and (2) compare these profiles in terms of

depressive symptoms, anxiety symptoms, and life satisfaction. Methods Survey data were collected from 664 students (178 males, mean age 19) in a Midwestern university. Food insecurity, depressive symptoms, anxiety symptoms, and life satisfaction were assessed by Food Insecurity Experience Scale, Center for Epidemiologic Studies Depression scale, General Anxiety Disorder scale, and Satisfaction with Life scale, respectively. Cronbach's alpha for all scales exceeded 0.87. Latent class analysis identified food insecurity profiles, and ANCOVA with Tukey's post hoc tests were used to compare life satisfaction, depressive symptoms, and anxiety across the profiles, controlling for covariates such as gender, race/ethnicity, residential location, and parental education. Results Four food insecurity profiles were identified: Minimal Food Insecurity (67% of the sample), Lack in Both Food Quantity and Quality (12%), Lack in Food Quality (16%), and Lack in Food Quantity (5%). The Lack in Both Food Quantity and Quality and Lack in Food Quality groups reported significantly lower life satisfaction and higher depressive and anxiety symptoms compared to the Minimal Food Insecurity group. The Lack in Food Quantity group reported higher life satisfaction than both the Lack in Food Quality and Lack in Both Food Quantity and Quality groups. Conclusions: Employing a person-centered approach, this study revealed a nuanced classification of food insecurity that could not be captured by a summed score. The results suggest that higher depressive and anxiety symptoms, and lower life satisfaction, tend to be linked to certain food insecurity subtypes. The findings highlight the need for targeted interventions to improve the mental health and well-being of students, particularly those experiencing deficiencies in food quality or both food quality and quantity.

### **Mental Health Anti-stigma for Asian American Youths: Preliminary Feasibility of a School-based Intervention**

Wenhua Lu, Emily Chan; William Wu; Michelle Chen; Michelle Kwon; Yuqing Zhang; Lawrence Yang

**Purpose:** This study provides initial assessment of feasibility and program acceptance of a school-based, mental health (MH) anti-stigma intervention culturally adapted from the evidence-based Bring Change to Mind program for Asian American (AA) high school students. **Methods:** From February to April in 2024, 51 students (including 38 AA youths) participated in an 8-session program with different activities (e.g., interactive lectures, role-playing, vignette discussion, photovoice) in a public high school in New York City. Forty-six students attended at least 7 to 8 sessions and were surveyed about their experiences; descriptive statistics were used for analysis. Seven focus groups were further conducted with 13 club members, 1 student club leader, and 2 club advisors (i.e., school counselors) to elicit feedback on program refinement, and thematic analysis was conducted following the Consolidated Framework for Implementation Research. **Results:** Overall, students scored high on items related to program acceptance, such as "I would recommend this program to others" ( $M = 4.4$ ,  $SD = 0.68$ ), "I liked the way that this program was delivered" ( $M = 4.2$ ,  $SD = 0.76$ ), and "I think that this program was designed for students like me" ( $M = 4.1$ ,  $SD = 0.88$ ). All youths indicated that this program had become a positive turning point in their life and that they started to think more about their future because of this program. Suggestions for program improvement included collaboration with other clubs for recruitment (e.g., college preparation club, Chinese language club), interacting with AA parents to promote family conversations about MH, and holding events during the Asian American Heritage Month to promote the program and foster a positive school environment about MH. **Conclusion:** The

pilot data revealed desirable student engagement, cultural appropriateness, and perceived impact in AA youths and point to the promise of the program for further implementation.

### **Meme exposure associated with e-cigarette perceptions and usage**

Zheng, Xia; Meng, Yang; Li, Wenbo; Lin, Hsien-Chang

**Introduction.** One particular form of message has gained wide attention from both users and scholars in the age of Internet and social media, that is, Internet memes. Given its power to spread ideas, individuals and organizations have used memes to disseminate health messages online. Specifically, both companies and public health organizations have used memes to influence e-cig behaviors. Does exposure to e-cigarette memes on social media shape related perceptions and behaviors among youth? If so, how? Our paper aims to answer those questions. **Methods.** This cross-sectional extracted data from restricted-use file of Wave 7 (2022-2023) of the Population Assessment of Tobacco and Health (PATH) study, a nationally representative study that collected information about tobacco use and associated health behaviors among adults ( $\geq 18$  years) and youth (12-17 years) in the United States. Our analyses investigated the association between youth participants' exposure to various sources of vaping memes related to e-cigarette use and their e-cigarette-related expectancies, perceptions, use, and cessation, while controlling for parental and youth factors. **Results.** Exposure to memes posted by friends, celebrities, and vape shops were all associated with lower perceived harmfulness, higher descriptive norms, more positive injunctive norms of using e-cigarettes, and more easiness for purchasing e-cigarettes ( $ps < .05$ ). For non-users, exposure to vaping memes was associated with higher susceptibility of using e-cigarettes ( $ps < .01$ ). Exposure to vaping memes posted by public health authorities

was associated with higher quit intentions among users ( $p < .05$ ). **Discussion.** E-cigarette memes may influence youth's perceptions about vaping and contribute to initiation among non-users. Internet memes could also be used in vaping prevention and health campaigns, which might be particularly effective among youth non-users.

### **The relationship between financial insecurity and mental disorders among adolescents: The protective effect of perceived social support**

Zhang, Xiao; De-Silva, Natasha; Shanazari, Eric; Rogers, Kim; Rogers, Christopher; Forster, Myriam

**Background:** Mental health challenges are the leading cause of death and disability among adolescents. Numerous studies suggest that financial insecurity (FI) negatively impacts mental health, often leading to depression and anxiety. However, almost no research investigates a) the relationship between perceived FI (worry about money, a place to live, food or clothing) and depression and anxiety symptoms among diverse adolescents and b) whether perceived social support can offset the risk of FI for mental disorders. **Methods:** Data are survey responses ( $N=1,769$ ) from a diverse sample of high school students enrolled in the Supporting Student Health and Resilience (SHARE) project. GLMs tested the hypothesized relationships between FI and depression (CESD), and anxiety (GAD-7) symptoms (adjusting for age, sex, ethnicity, and state) and whether perceived social support (MSPSS) moderated these relationships. **Results:** On average, students were 15.6 ( $SD=2.0$ ) years old, evenly divided by sex (48% male), and 31% identified as White, 31% as African American, 22% as Hispanic, 9% as Multiethnic, and 7% as Asian. Over 1 in 4 students (27%) reported FI, 48% had moderate to high depressive symptoms, and 33% had moderate to severe anxiety symptoms. FI was associated with significantly higher odds of screening positive for depression (AOR:2.3,

95%CI:1.665-3.216) and anxiety (AOR:2.8, 95%CI:2.029-3.806), while higher perceived social support was associated with significantly lower odds of depression (AOR:0.9, 95%CI:0.871-0.929) and anxiety (AOR:0.9, 95%CI:0.894-0.951). Importantly, high levels of perceived social support offset the negative effects of FI for depression ( $p < 0.05$ ) but not anxiety. Discussion: Our results confirm that FI can increase the risk of depression and anxiety; however, perceptions of having high social support can improve mental health symptomology among youth experiencing financial strain. School support programs need to consider the role of financial strain on mental wellbeing and invest in initiatives that foster protective factors such as social support.

### **Family History Density of Substance Use: Influence on Participant Substance Use Onset and Duration**

Martel, Michelle, M.; Mattingly, Delvon

**INTRODUCTION:** Substance use disorders (SUDs) impact millions globally, with family history as a potent risk factor. However, previous research has been limited by small, homogenous samples, a focus on males, and simplistic family history measures. These studies frequently overlooked the influence of extended family members, a range of substances, and sex-specific differences in SUD transmission. Leveraging the National Epidemiological Survey on Alcohol and Related Conditions-III (NESARC-III) dataset, we examine how weighted family history density (FHD) influences the intergenerational transmission of SUDs, age at first substance use, and duration of use, focusing on sex differences. **METHODS:** We conducted a cross-sectional analysis using NESARC-III data (2012-2013) from a nationally representative sample of 36,309 adults. Weighted FHD was calculated based on SUDs in first- and second-degree relatives. Linear regression models assessed the relationships between FHD, age at onset, and duration of substance use, controlling for demographic, socioeconomic,

and geographic factors. Additionally, we examined SUD-type concordance between family members and participants, and correlations of SUDs, stratified by sex. **RESULTS:** Each unit increase in weighted FHD was associated with a 0.54-year earlier onset [ $\beta = -0.54$ ,  $SE = 0.02$ ], and 0.48-year longer duration ( $\beta = 0.48$ ,  $SE = 0.03$ ). Additional analyses revealed significant substance preference concordance between family members and participants. Sex-stratified analyses indicated that males showed the strongest correlations with paternal SUDs, while females exhibited stronger correlations with maternal SUDs and higher overall correlations with family members. **DISCUSSION:** Weighted FHD significantly predicts earlier initiation and longer substance use duration, with significant concordance of substance preferences within families and sex-specific patterns in familial transmission of SUDs. These findings emphasize the importance of incorporating family history assessments into prevention and intervention strategies. Future research should explore these associations in diverse populations through longitudinal studies and examine interactions between family history and other genetic and environmental risk factors.

### **Increasing Efficacy of Interventions to Increase 2023-2024 COVID-19 Vaccine Uptake in Undergraduate and Graduate Public Health Students**

Nagajothi, Nagashreyaa; Dou, Julia; Felter, Elizabeth; Lazarus, Abby; Hoffman, Beth

**Purpose:** As of May 2024, only 22.5% of US adults had received a dose of the updated 2023 COVID-19 vaccine. Previous research has found that vaccine misinformation on social media can decrease vaccination among undergraduates, but research has yet to examine this among students studying public health. Thus, we used a mixed-methods approach to investigate barriers and facilitators to 2023 COVID-19 vaccine uptake among undergraduate and graduate public health students, with the goal of

informing future vaccination campaigns. **Methods:** We distributed a Qualtrics survey to public health students at a large university associated with an academic medical center. The survey included closed and open-ended items assessing student status (graduate vs. undergraduate), Fall 2023 COVID-19 vaccine uptake, and influence of factors like social media and the proximity of the campus' large academic medical center on vaccination. We analyzed quantitative data with descriptive statistics and Chi-square tests and used thematic analysis to analyze responses to open-ended items. **Results:** 107 students completed the survey; 43% (n=46) were graduate students. Approximately 50% of participants (n=53) had not received their Fall 2023 COVID-19 vaccine, but graduate public health students were significantly more likely to have received the vaccine than undergraduates (p=0.008). For respondents that did not plan to vaccinate (n=27), the most common reasons were "COVID-19 is not a concern" (n=14, 50%) and "It is too inconvenient to receive a vaccine" (n=11, 39.2%). Thematic analysis revealed convenience and accessibility as prominent facilitators of vaccination, with most respondents denying the influence of social media on their vaccination decisions. Some respondents (n=10, 11%) expressed that they wanted vaccine information from reputable scientific sources, not social media. **Conclusions:** Our results emphasize the importance of prioritizing convenience and accessibility when implementing vaccination programs for public health students. Additionally, these campaigns should incorporate information from reputable scientific sources.

### **Systems thinking tools shift stakeholder beliefs and planned actions in addressing food and nutrition insecurity**

Wasim, Natasha; Martinez, Marie, Ferguson; Heneghan, Jessie; Lee, Bruce, Y; Zhang, Angela; Scott, Jose; de la Haye, Kayla

**Purpose:** Food and nutrition insecurity in the U.S. comprises overlapping systems

contributing to poor health outcomes. Addressing these issues requires holistic strategies, yet stakeholders often work in silos. Participatory group model building (GMB) is a systems-thinking tool that maps interconnected factors and their influence on outcomes. This study in Los Angeles (LA) County used GMB to (Aim 1) generate insights into systemic drivers of food insecurity and (Aim 2) assess how this tool changed stakeholder beliefs and actions. **Methods:** Stakeholders (N=24) from government, CBOs, and the private sector, who were involved in shaping LA County's 10-year food equity strategic plan, participated in three GMB workshops and created a systems map in the form of a causal loop diagram. Survey data collected pre- and post-workshops assessed stakeholders' (i) beliefs about the key drivers of food and nutrition insecurity and (ii) actions they are taking to address these issues. **Results:** The workshops generated a systems map with 69 variables and 166 causal mechanisms influencing food and nutrition insecurity. These variables spanned household, community, and structural levels, with overarching drivers (e.g., "structural racism" and "climate change.") Pre- (N=24) and post- (N=13) workshop surveys showed a shift in stakeholder perception. After the workshops, "stakeholders identified more community and structural factors as key drivers of insecurity (88% of factors post-workshops vs. 76% pre-workshops), and prioritized more community factors for action (49% post-workshop, vs. 18.0% pre-workshop). **Conclusions:** This study shows that systems thinking tools, like participatory GMB, help stakeholders grasp complex systems that drive food and nutrition insecurity and the importance of focusing their actions on community and structural drivers. Systems thinking was later evidenced in the county's food equity strategic plan, guiding over \$20M in investments. Systems thinking tools may benefit other coalitions in addressing food and nutrition insecurity

### **Nativity Matters: Social and Structural Drivers of Polytabacco Use Among U.S.- and Foreign-Born Black Young Adults**

Weisiyu Abraham Qin

**Background.** The burden of tobacco use is not randomly distributed; racial/ethnic minorities and low socioeconomic status individuals bear a significant proportion of the burden. Particularly among Black young adults (BYA) in the U.S., a diverse population group who also experience a disproportionate burden of social and structural stressors, social and structural drivers of higher-risk tobacco use behaviors (i.e., polytabacco use) remains unclear. This study examined the association of social and structural determinants such as housing and food insecurity, safety concerns, and race-related adversity with polytabacco use among U.S.- and foreign-born BYA.

**Methods.** Data were from U.S.- and foreign-born Black YA (N=484). Participants completed a self-administered online survey assessing their: experience of racist events (SRE), concerns about societal issues, SDOH risks (food and housing insecurity, safety concerns), and past 30-day tobacco products used. Firth bias corrected multinomial regression models (overall and stratified by nativity) were used to assess the associations of these determinants with a three-level polytabacco product use outcome (0=no use, 1=single use,  $\geq 2$ =poly use).

**Results.** On average, participants were 21.96 years, 53.1% female, 62.4% U.S.-born, and 37.6% foreign-born. In the overall model, polytabacco product use odds were higher for males (aOR=3.93, 95%CI=2.18-7.10), those experiencing unsafe environment (aOR=2.59, 95%CI=1.38-4.88) and SRE (aOR=1.03, 95%CI=1.01-1.05). Among foreign-born BYA, housing insecurity and SRE were associated with higher odds of polytabacco use (aOR=1.95, 95%CI=1.05-3.63 and aOR=1.06, 95%CI=1.02-1.11). Among U.S.-born BYA, safety concerns and SRE were associated with higher odds of polytabacco use

(aOR=3.19, 95%CI=1.51-6.73 and aOR=1.02, 95%CI=>1.00-1.05).

**Conclusion.** Increased exposure to racist events was consistently associated with polytabacco use overall and when stratified by nativity. However, there were nativity differences in the type and impact of social and structural determinants associated with polytabacco use among BYA. Intervention efforts should be tailored to address the specific needs and risks of U.S.- and foreign-born BYA.

### **Long-Term Marijuana Use and Mental Health: Evidence from 12 years of Data**

Lu, Yu; Lee, Jeong Kyu; Muiru, Sarah; Temple, Jeff R

**Introduction:** Marijuana use has become prevalent in adolescents and young adults. The study aims to examine marijuana use and its long-term effects on mental health using 12 years of data.

**Methods:** We used data from an ongoing longitudinal study that originally recruited 1,042 adolescents in multiple high schools in Texas. By 2023, 12 data waves were gathered including annual survey data from 2010-2017 (waves 1-8) and 2020-2023 (waves 9-12). We examined three marijuana use variables – number of years used marijuana, age of initiation, and ever daily marijuana use - and their associations with depression, mental health treatment, and suicide ideation and suicide attempt at Wave 12. We conducted a series of multiple regression analyses, controlling for age, gender, race, and prior mental health.

**Results:** Of the 1031 participants who responded to the marijuana use questions, 25.5% never used marijuana and 41.9% used marijuana for 4 or more years. Close to half (48.3%) of the participants reported first use of marijuana before age 18, and 23.5% used marijuana daily at some point of their life. Analyses suggest the number of years used marijuana positively associated with past year depression ( $\beta = .10, p < .05$ ) and anxiety ( $\beta = .13, p < .05$ ), and ever used marijuana daily was linked to depression ( $\beta$

= .12,  $p < .01$ ). Furthermore, number of years used marijuana was significantly associated with past year mental health treatment [Adjusted odd ration (AOR) = 1.15, 95% confidence interval (CI): 1.06, 1.24], and suicide ideation (AOR = 1.17, 95% CI: 1.06, 1.29). Age of marijuana use initiation did not show significant association, and none of the marijuana use variables significantly associated with past year suicide attempt. Conclusion: Findings suggest long-term marijuana use can lead to mental health problems. Intervention and preventions are needed for adolescents and young adults.

### **Prenatal substance exposure and early adolescent substance experimentation in ABCD**

Doherty, Emily, A; Breslin, Florence, J; Moyers, Susette, A; Crockett-Barbera, Erica, A; Appleseth, Hannah, S; Leffingwell, Quinn; Croff, Julie, M

Background Early substance use initiation is a strong predictor of later substance use disorder and dependence. While a number of environmental factors have been shown to influence substance use initiation, the influence of prenatal substance exposure is less well studied. The aim of this study was to examine associations between parent report of commonly used substances in pregnancy and early substance experimentation in a sample of early adolescents.

Methods: Participants were youth from the Adolescent Brain Cognitive Development (ABCD) study. The analytic sample included participants where both exposure and outcome variables were measured ( $n=10,141$ ). Estimates of the total number of drinks consumed, cigarettes smoked, and occasions of marijuana use in pregnancy were calculated based on parent reported averages before and after pregnancy knowledge. Logistic regression was used to test associations between estimated prenatal substance exposure and endorsement of alcohol, marijuana and tobacco experimentation up to the 4-year

follow up if completed by data release (Release 5.1).

Results: In total, 2,234 youth were prenatally exposed to alcohol (22.0%) ranging from 0.4 to 80 drinks, 1,093 to tobacco (10.8%) ranging from 14 to 2,380 cigarettes, 403 to marijuana (0.04%) ranging from 0.03 to 19.8 occasions. For each additional drink consumed in pregnancy the odds of alcohol experimentation increased by 2% (OR=1.02, 95% CI (1.01,1.02),  $p<.001$ ). Further odds of both marijuana and tobacco experimentation increased by number of cigarettes smoked (Marijuana: OR=1.06, 95% CI 1.04-1.09,  $p<.001$ ; Tobacco: OR=1.03, 95% CI 1.01-1.05,  $p<.05$ ) and marijuana occasions in pregnancy (Marijuana: OR=1.00, 95% CI 1.00-1.00,  $p<.05$ ; Tobacco: OR=1.00, 95% CI 1.00-1.00,  $p<.001$ ).

Discussion: In this large sample of early adolescents, prenatal substance exposure predicted youth substance experimentation in a dose dependent manner. However, given proportion exposed, particularly for cannabis and the small effect sizes observed, replication of findings and further examination of clinical significance is warranted.

### **“There’s no real urgency when it comes to us”: Critical Discourse Analysis of Black Communities’ Lived Experience with Opioid Overdose Response in Indianapolis Area**

Alba Lopez, Leonardo; Seo, Dong-Chul; Satterfield, Naomi; Crabtree, Charlotte; Cochran, Nicki; Lee, Shin Hyung

Purpose To examine how Black communities construct their discourses about opioid overdose response from their lived experience in Indianapolis area.

Methods We randomly selected and analyzed 20 out of 50 interviews using critical discourse analysis (CDA) and intersectionality as an overarching framework for the interpretation process. The one-on-one interviews were conducted with 50 Black Indianapolis residents ages 18 or older in 2023 by a Black person with lived

experience in recovery. Each interview lasted about 60 minutes with ten open-ended questions which were reviewed, edited and piloted by Black community members. We stopped selecting interviews for this CDA at 20 interviews as we reached data saturation. Results These interviews revealed complex ways in which Black communities in Indianapolis navigated the opioid overdose crisis. While the discourses on opioid overdose response were shaped by the intersectionality of a range of factors, including institutionalized racism, social discrimination, and fear of mistreatment, the normalization of inadequate opioid overdose response was exacerbated by the stereotypes on Black communities, lack of access to resources and information, and historical mistrust in healthcare and law enforcement bodies.

Conclusions Critical discourse analysis of Black Indianapolis communities' lived experience with overdose response indicates that intervention programs to reduce overdose deaths in the Black communities should move away from isolated approaches to holistic and integrated programs that consider various intersecting factors, including structural racism, stigma of drug use, fear of mistreatment, lack of resources, and mistrust of law enforcement.

### **Longitudinal Behavioral Transitions in Adolescent Electronic Nicotine Delivery Systems Use: Markov Multistate Transition Model**

Lee, Shieun; Seo, Dong-Chul

Introduction: Many prior studies on adolescent electronic nicotine delivery systems (ENDS) did not differentiate regular users from light users or experimenters. Little is known on the longitudinal behavioral transitions among adolescent ENDS users.

Methods: Data were drawn from Waves 2, 3, 4, 4.5, and 5 (October 2014- November 2019) of the Population Assessment of Tobacco and Health (PATH) Study and analyzed in 2023. A total of 894 participants

(1) who reported at least one day of ENDS use within the past 30 days at any of the waves and (2) who had ENDS use data on at least two different waves were retained in the final analysis sample (N = 894). Markov multistate models were fitted to estimate transition hazard rates between experimental use, nonfrequent use, frequent use, and no use.

Results: Whereas experimental use grew from 2.6% at Wave 2 to 15.4% at Wave 5, nonfrequent use grew from 2.9% to 18.9% and frequent use grew from 0.3% to 18.8%. Among those adolescents who experimented with ENDS, 65% reverted to no use whereas 20% progressed to either nonfrequent (12%) or frequent ENDS use (8%) in a year. Once adolescents became nonfrequent ENDS users, the percentage progressing to frequent ENDS use jumped to 19%. The average past-30-day use frequency of those who reported "fairly regular" use increased over time (6.2 days at Wave 2 to 15.7 days at Wave 5).

Conclusions: These findings demonstrate worrisome tendency of increasing intensity of ENDS use in today's adolescents.

### **Enhancing Cancer Care: Assessing the Impact of a Navigation Tracking Tool on Cancer Care Delivery Metrics in Los Angeles**

Campbell, Kelsie, L; Torrence-Hil, Joi; Whitten, Karey, A; Abbud, Melissa; Beard, Trista, A; Querubin, Jynette; Stewart, Charis; Dobre, Mariana; Hughes Halbert, Chanita

Importance: Pioneered in the 90s by Dr. Harold Freeman, patient navigation interventions have emerged as a strategy to reduce cancer disparities, particularly among underserved and minority populations. Organizations such as the AONN+ have developed evidence-based navigation metrics relevant to cancer care to demonstrate the value and sustainability of oncology navigation. However, the ability to report such metrics is often determined by the robustness of data collection procedures and the reporting capabilities of Electronic

Health Record systems. Objectives: To assess whether a standardized navigation tracking tool improves key navigation metrics in a cancer navigation program. Design, Setting, and Participants: We conducted a cohort study of breast, lung, and sarcoma cancer patients seen between July 1, 2022, and June 30, 2024, at USC Norris Comprehensive Cancer Center in Los Angeles. A navigation tracking tool was introduced in January 2023, after the collection of baseline metrics. Main Outcome and Measures: The primary outcomes measured included navigation caseload and time from diagnosis to initial treatment. These metrics were tracked by the nurse navigation staff using a standardized navigation tracking tool. We developed and implemented this tool as part of a navigational capacity-building initiative funded by the American Cancer Society. Results: The study included 517 patients—137 breast, 312 lung, and 68 sarcoma cancer cases. Most patients (82%) were over 50 years old, with 42.4% identifying as white, 15.4% as Asian, and 5.4% as Black or African American. The navigation caseload increased from 158 at baseline to 268 in June 2024, while the time from diagnosis to treatment initiation decreased significantly from 33.2 days to 22.2 days. Conclusion: Implementing a standardized tracking tool improved key navigation metrics in an established cancer navigation program. Standardized tracking provides a sustainable strategy for assessing the efficacy of navigation services and identifying areas for improvement in addressing cancer disparities. Furthermore, tracking provides a quantified means to demonstrate the value of these services, supporting the case for their broader implementation.

### **The State of Menstrual Health Education: A Content Analysis of US Education Standards**

Richardson, Emily, M; Lovett, Kylie; Kwaku Akakpo, Victor; Dobbs, Page, D

Purpose: The purpose of this study was to explore US public school education standards for the inclusion of menstrual health education throughout K-12 curriculum. Methods: Publicly available US public school Kindergarten-12<sup>th</sup> grade education standards were collected from each state's Department of Education website, including Washington, DC(n=51). A content analysis of the standards was conducted using Braun and Clarke's six phases of thematic analysis. Inductive coding was used in the pilot study to create an initial codebook, followed by another round of deductive coding using Global Menstrual Health Collective Guidelines, MENSES assessment mnemonic for healthcare providers, National Sex Education Standards, and D.C. Act 24-294,2022 as guidelines. Two additional coders were trained on the codebook in Qualtrics and coded the standards with the lead author. Interrater reliability was calculated with Cohen's kappa light ( $\kappa=.718$ ) after the first five education standards were complete, showing substantial agreement. Results: After coding all 51 standards, it was determined that 14 states included the words menstruation or menstrual cycle in their education standards, two states from the West region (15.4%), two from the Midwest (16.6%), three from the Northeast (33.3%), and seven from the South (41%). However, seven of these states (50%) did not specify in which grade the content should be taught. Only three of these states specifically taught menstruation in or before 5<sup>th</sup> grade, four states taught in 7<sup>th</sup> grade, and two taught in 12<sup>th</sup> grade. Conclusions: Teaching menstruation prior to menarche (the first period) has been shown to decrease fear, shame, discomfort, feelings of disconnection, and increase self-autonomy and empowerment. While some states have

pending legislation to improve period poverty, these legislative efforts should include education. Additionally, some states are postponing instruction until later grades, potentially negatively impacting psychosocial benefits of pre-menarche education. Therefore, national standards should be considered to ensure adequate education occurs.

### **Contextualizing Breast Cancer Content on Facebook: Comparing English and Spanish Posts Using Deep Learning and Metadata Mining**

Valdez, Danny; Muralidharan, Rasika; Soto-Vasquez, Arthur D; Montenegro, Maria S;

**Introduction:** Breast cancer is the second most diagnosed cancer among women in the U.S. and globally. For individuals with limited access to medical systems, especially those with limited English proficiency, social media sometimes represents a primary source of information about breast cancer. This reliance raises concerns about the variability of the information, which may influence decision-making and health outcomes. **Purpose:** This study contextualizes English and Spanish Facebook breast cancer posts and metadata using deep learning to highlight content and engagement differences by language. **Methods:** Data for this study were collected from CrowdTangle (May 2023–April 2024). After removing duplicates, our sample comprised  $N(\text{English}) = 243,029$  and  $N(\text{Spanish}) = 104,056$  posts. We approximated topics using BERTopic, a neural network pipeline. We then measured engagement with an analysis of metadata, including likes, shares, comments, and page category information. **Results:** Our BERTopic analysis yielded  $N=40$  English (Coherence = 0.58) and  $N=30$  Spanish (Coherence = 0.52) topics. Most topics overlapped between English and Spanish, with common themes including symptomatology, advocacy, oncological advancements, and solicitation of screening services. However, Spanish posts emphasized community-specific outreach. In

English, the most shared content originated from leading authorities in breast cancer (e.g., Susan G. Komen); in Spanish, top shared content came from local politicians, food companies, or lesser-known nonprofits with no apparent breast cancer specialty. **Discussion:** Our results suggest that while English and Spanish breast cancer content may be informative, educational, and support-driven, there are notable differences in sources of information. English content, mostly shared by well-known cancer organizations, aligns with current screening recommendations. In contrast, Spanish posts focus more on community outreach but include outdated advice, such as encouraging self-examinations, and perspectives from politicians. This highlights the need for continued digital surveillance of multilingual social media data to ensure Spanish-speaking audiences receive accurate, evidence-based breast cancer information.

### **Using Digital Footprints to Understand Recovery: Identifying Engagement Patterns in The Phoenix Mobile App**

Valdez, Danny; Davis, Andrew S; Heinrich, Katie M; Collinson, Beth

**Introduction:** Mobile apps are powerful tools for promoting and sustaining healthy behaviors. Research strongly supports that social connection via mobile apps, supplemented by in-person interaction, is vital in helping individuals in recovery from substance or alcohol use disorders maintain sobriety. However, research into the digital footprints of mobile app users, as a strategy to assess app usage experiences in a recovery context, is lacking. **Purpose:** This study utilizes the Phoenix mobile app, a social media platform specifically designed for individuals in recovery from substance use disorders, to construct latent profiles of highly engaged app users from a random sample of  $N=500,000$  posts grouped by user IDs. **Methods:** We applied a natural language processing pipeline to quantify differences between individual and grouped language-

related observations using cosine similarity matrices. These observations were supplemented with lexicon-based sentiment analysis to identify anomalous entries, users, and community spaces. Results: Across approximately 11,000 unique users and 1,000 community spaces, we identified the top posters and the most engaged community spaces. The majority of dialogue focused on individuals seeking in-person social connections through the app, while others shared personal sobriety motivators. From individual feeds, we constructed latent profiles using language patterns and cosine similarity from highly engaged users. These latent profiles allowed us to implicate specific user interests, including apparent interests in religion, art, poetry, and pets/children. They also allowed us to triangulate users whose language patterns deviated substantially from core dialogues, evidenced by highly orthogonal cosine vectors and lower-than-average sentiment scores. Discussion: Digital footprints can reveal deeper, more nuanced interplays underlying social media app usage. Our analysis aimed to construct latent profiles for highly engaged users as a strategy to assess app-use satisfaction and functionality. These insights can be further leveraged for direct interventions among individuals whose latent profiles suggest personal sobriety struggles.

**Longitudinal pathways and transition patterns of flavored tobacco products use among reproductive-aged women in the U.S.**

Park, Hye jin; Seo, Dong Chul

Background: Menthol cigarettes are the major flavored tobacco product among U.S. reproductive-aged women followed by the popularity of emerging flavored electronic nicotine delivery system (ENDS). The high prevalence of flavored tobacco product use among women is a critical concern due to the potential for adverse health outcomes on maternal and child health. However, there is lack of evidence between the transition behavior between flavored tobacco products

(FTPs) among women. Aims: This research longitudinally examines the transition behavior between flavored tobacco products use among U.S. reproductive-aged women. Compare between age, race, and current pregnancy. Methods: We applied a Markov multistate transition model to the Population Assessment of Tobacco and Health Study waves 2-5 (2014-2019). We examined transition rates between menthol cigarette users, non-cigarette FTP users (e.g., e-cigarettes, hookah), non-FTP users, and discontinued user states and estimated hazard ratios for age, current pregnancy, and race/ethnicity. Results: FTP use among women were persistent with 76.5% (95% Confidence Interval (CI) 72.6% to 80.7%) of menthol cigarette users and 49.7% (95% CI 41.4% to 62.3%) of non-cigarette FTP users after one wave. The transition probabilities between FTP use were low (ranging from 1.3% to 2.5%). Non-cigarette FTP users were more likely to transition to discontinued use (44.2%, 95% CI=37.9, 49.6) than menthol cigarettes (11.6%, 95% CI=9.6, 14.1). Approximately 11% of discontinued users relapsed to FTPs (menthol cigarette 4.7%, 95% CI=3.5, 6.8; non-cigarette FTPs 7.6%, 95% CI=5.8, 9.9). Unexpectedly, pregnant FTP users were less likely to discontinue tobacco (menthol cigarette 3.8%; non-cigarette FTP 30.6%) and more likely to relapse to menthol cigarettes (11.0%) than non-pregnant FTP users. Transition rates varied among sociodemographic groups among women. Conclusion: A substantial proportion of RAW menthol cigarette smokers remained using menthol cigarettes over 4 years even among pregnant women. The odds of remaining the use of FTP were more likely in younger age and Black populations. Findings suggest flavor tobacco regulations would reduce health disparity in FTP transitions among U.S. reproductive-aged women.

### **Identifying predictors of multi-year cannabis vaping in U.S. young adults using machine learning**

Seo, Dong-Chul; Choe, Siyoung; Agle, Jon; Elam, Kit; Bidulescu, Aurelian

**Introduction:** Increasing number of current cannabis users report using a vaporized form of cannabis and young adults are most likely to vape cannabis. However, the number of studies on cannabis vaping is limited, and predictors of cannabis vaping among U.S. young adults remain unclear. Previous studies on cannabis vaping have known limitations, as they (1) relied heavily on regression-based approaches that often fail to examine complex and non-linear interactive effects, (2) focused on examining cannabis vaping initiation but not on its use over multiple years, and (3) failed to account for recreational cannabis legalization (RCL) status.

**Methods:** This study was a secondary analysis of the restricted use files of the Population Assessment of Tobacco and Health Study, Waves 4-6 (December 2016-November 2021). A two-stage machine learning approach, which included Least Absolute Shrinkage and Selection Operator (LASSO) and Classification and Regression Tree (CART), was used to identify predictors of multi-year cannabis vaping while accounting for state-level RCL status among a representative sample of U.S. young adults.

**Results:** Stratified CART created a five-terminal-node prediction model for states with RCL (split by cannabis use, cigarette use, bullying behavior, and ethnicity) and a different five-terminal-node prediction model for states without RCL (split by cannabis use, heroin use, nicotine vaping, and hookah use).

**Conclusions:** Characteristics predicting multi-year cannabis vaping appear to differ from those of cannabis vaping initiation. Results also highlight the importance of accounting for RCL status because predictors of cannabis vaping may differ for

individuals living in states with and without RCL.

### **Teachers versus Parents: A Comparative Study of Attitudes, Beliefs, and Competency towards Menstrual Health Education**

Richardson, Emily, M; Dobbs, Page, D

**Purpose:** The purpose of this study was to explore the association between parents' and teachers' attitudes, perceived barriers, perceived benefits, and self-efficacy towards pre-pubescent students receiving menstrual health education in public schools; and their levels of comfort and capability teaching menstrual education. **Methods:** A convenience sample of parents/guardians and teachers (N=300) in the US were recruited to complete an online cross-sectional survey evaluating the association between levels of capability, comfort, and constructs of the Health Belief Model. Attitude, perceived benefits, perceived barriers, and self-efficacy were measured by adapting a published scale, with an overall instrument reliability of  $\alpha=.87$ . Comfort and perceived capability used domains from the Professional Learning Standards for Sex Education tool evaluating content areas specific to puberty, reproduction, and menstruation. Inclusion criteria for the parent survey required their oldest child be born between 2013-2024. ANOVAs were used to calculate the association between groups. **Results:** Results were divided into parents/guardians(n=148), teachers(n= 58), or both(n=94). Those in the parent and both groups had significantly higher levels than teachers of perceived capability and comfort teaching medically accurate terminology to children( $p<.05$ ). Additionally, parents more than teachers reported higher levels of comfort teaching how the human body prepares for reproduction and healthy habits during puberty( $p<.05$ ). Participants in the both category reported significantly higher perceived capability than parents teaching disease processes impacting the menstrual cycle( $p<.05$ ). Parents and both groups had

significantly higher levels of self-efficacy than teachers ( $p < .005$ ). Teachers showed more positive attitudes than other groups ( $p < .05$ ). Conclusions: Parents and teachers have a shared responsibility teaching children menstrual health. While parents showed higher associations in our sample, 39.4% of teachers taught English. Future research should examine competency specifically for teachers assigned to teach menstrual health. Additionally, teachers often report self-efficacy is impacted by lack of supportive parents or administration, which may be reflected in these findings.

### **Examining the relationship between social vulnerability and sidewalk access and walkability across a large Southeastern US city**

Farnaz Hesam Shariati; K. M. Thomas; S. H. Hallum; Andrew T. Kaczynski

**Purpose:** Physical activity (PA) levels consistently differ across sociodemographic characteristics and neighborhood features. The walkability level of neighborhoods is one of the significant reasons for such differences. Research about access to specific neighborhood walkability features according to population and community characteristics is limited and inconsistent. The purpose of this study was to examine how multiple aspects of neighborhood walkability, as measured by sidewalk access and the National Walkability Index (NWI), varied according to four themes of the social vulnerability index (SVI) across census block groups ( $N=115$ ) in Columbia, South Carolina (SC).

**Methods:** Linear regression models were used to analyze the relationship between overall SVI and its four themes (i.e., socioeconomic status, household characteristics, racial and ethnic minority status, and housing type and transportation, which each contain multiple sub-factors) for both sidewalk access and NWI in the study setting while controlling for block group population density.

**Results:** The housing type and transportation theme (i.e., theme 4) of SVI was significantly and positively associated with both sidewalk access ( $B = 86.52$ ,  $p < .001$ ) and NWI ( $B = 6.68$ ,  $p = .002$ ), suggesting that higher social vulnerability in this theme is linked to better walkability and sidewalk coverage. Other themes did not show significant associations with either outcome variable.

**Conclusions:** These findings highlight the importance of considering social vulnerability and neighborhood characteristics, such as walkability and sidewalk access, in promoting PA and addressing disparities in chronic disease. Future investigations could explore micro-scale aspects of sidewalks and walkability using audit tools.

### **Coping Strategies and Depression Among Diverse College Students in Southern California**

Aguilar Avila, Giselle; Hamidzadeh, Olivia; Dahlman, Linn; Forster, Myriam; Orjiakor, Stephanie; Skropos, Katherine; Szostkowski, Nickolas; Silver, Steve; Rainisch, Bethany

**Introduction:** Research shows that college students may be at higher risk for experiencing negative mental health outcomes, particularly depression due to unique stressors such as academic pressures and social transitions into adulthood. Literature suggests that coping domains may either exacerbate or mitigate these mental health outcomes by reinforcing adaptive (problem-focused coping) or maladaptive (emotion-focused and avoidant coping) behaviors. This study investigates the relationship between coping domains and mental health outcomes, specifically depression, among a sample of diverse college students in Southern California.

**Methods:** Data ( $N=254$ ) include baseline survey responses from web app program focusing on substance use prevention and adaptive coping skills development. Depression was measured using the CES-D scale as a binary variable (1=CESD 10 cutoff). Regression model assessed the

association between avoidant, problem-focused, and emotion-focused coping domains (COPE 28 index), with depression. Results: 66% percent of the sample were female, with an average age of 21 years (SD = 5.96). The sample included 56% Hispanic, 16% Asian, 14% NH White, 10% Black, and 4% other race/ethnicity. Students using problem-focused coping had significantly lower odds for screening positive for depression, compared to those using emotion-focused and avoidant coping. (OR: 0.598, 95% CI: 0.425, 0.841). Conversely, students using emotion-focused (OR: 1.664, 95% CI: 1.170, 2.366) and avoidant coping (OR: 2.134, 95% CI: 1.502, 3.034) had significantly higher odds of screening positive for depression, compared to those who use problem-focused coping.

Discussion: Early observations showcased a significant association between avoidant and emotion-focused coping strategies and depressive symptoms. These findings underscore the significance in cultivating healthy coping strategies to reduce the risk of developing depression during young adulthood in college through targeted interventions focusing on adaptive coping strategies.

### **Sociodemographic Disparities in Children's Environmental Exposure to Tobacco, E-cigarette, and Cannabis Aerosols: Findings from the ABCD Study**

Appleseth, Hannah, J; Leffingwell, Quinn, A; Crockett-Barbera, Erica; Doherty, Emily, A; Moyers, Susette, A; Croff, Julie, M

Purpose: This study examines sociodemographic correlates of children's exposure to environmental tobacco smoke (ETS), electronic nicotine vapor (ENV), and cannabis smoke (ECS) using data from the ABCD Study. Despite public health efforts, nearly 40% of U.S. children remain exposed to ETS, with exposure rates varying across sociodemographic groups. Recent trends show declining cigarette use but increasing e-cigarette and cannabis use among adults

of childbearing age, potentially increasing children's exposure to ENV and ECS.

Method: Data from the 2-year follow-up ABCD survey (2018-2020, children aged 8-11) was analyzed. Parents completed surveys on sociodemographic variables and environmental exposures. Child's race and parent education level were included in the current study. Exposure to aerosols from cigarettes, e-cigarettes, and cannabis in their primary residence was assessed. Descriptive statistics (frequencies, cross-tabulations, column percentages) were used to analyze the prevalence of environmental exposures.

Results: Of respondents (N=1740), 19% reported ETS exposure, 37% reported ENV exposure, and 11% reported ECS exposure. African American or Black children had disproportionately high ETS exposure (38.8% vs. 23.9% representation). Children of parents with lower education levels showed higher ETS exposure. White children had the highest e-cigarette exposure (70.4% vs. 73.0% representation), although it was a slightly lower percentage than their representation in the sample. African American or Black children had the highest cannabis exposure (21.7% vs. 14.9% representation). Children of parents with some college education showed the highest cannabis exposure rate (22.4% vs. 18.8% representation).

Conclusions: The study found similar exposure rates across sociodemographic variables to previous findings, with exposure being disproportionately higher among African American/Black children and children of parents with lower education levels. These results highlight persistent disparities in environmental exposures among children and underscore the need for targeted interventions to address these inequities.

### **Narrowing the Quality Service Gap Through Engaging Community Partners to Responding to the Needs of the Sexual Assault Survivors of Rural Texas**

Clark, Heather, R; Myint, Wah, W; Mohd Rafiq, Alfiya Shaikh; Zemanek, Kim; Ward, Kayce; Mitchell, Stacey; Downing, Nancy

**Background/Purpose:** Texas Teleforensic Remote Assistance Center (Tex-TRAC) is Texas A&M Health's Center of Excellence in Forensic Nursing's statewide telehealth program. In collaboration with the Texas Association Against Sexual Assault (TAASA) and local law enforcement (LE) in partner communities, one program component is an eight-hour criminal justice training providing an overview of the Tex-TRAC program, neurobiology of trauma, effects on survivors of sexual assault when responding to sexual assault survivors in a trauma-informed manner, and the role of and importance of survivor advocacy in the response to sexual assault. This study describes knowledge and attitude changes in training participants and evaluates commonly missed knowledge questions.

**Methods:** We used cross-sectional pre-post data (N = 159) from eight training sessions at seven sites. Paired t-tests of pre- and post-training mean knowledge and positive attitude scores and the prevalence of commonly missed questions was calculated. **Results:** Paired t-test results showed significant improvement in mean knowledge scores between the pre-test (Mean (M) = 8.77, Standard Deviation (SD) = 0.09) and the post-test (M=10.02, SD=0.09);  $t(158) = -12.21, p < 0.001$ . Similarly, the positive attitude mean score revealed improvement from the pre-test (M=9.43, SD=0.22) to the post-test (M=11.03, SD=0.20);  $t(158) = -7.86, p < 0.001$ . In all eight training sessions, the question most missed by participants was about the maximum number of hours allowed, by law, in which a sexual assault survivor may have a sexual assault exam conducted. Almost three-quarters (n = 109, 69%) missed this question in the pre-test. The number of respondents missing this

question decreased to 43 (14%) in the post-test.

**Conclusion:** Findings suggest LE-focused training may enhance the knowledge and understanding of LE on sexual assault survivors and lead to improved outcomes for sexual assault survivors.

### **Exploring Determinants of Implementation for the Texas Prenatal Syphilis Screening Policy in Clinic Settings**

Akpan, Idara, N; Brosnan, Amanda; Johnson, Kaeli, C; Alkhatib, Sarah, A; Garza, Sophia, R; Neelamegam, Malinee; Griner, Stacey, B

**Purpose:** Congenital syphilis contributes to negative birth outcomes such as birth defects, premature births, and stillbirth. Over the years, studies have shown a continuous rise in congenital syphilis cases in Texas. In 2019, Texas updated the prenatal syphilis screening policy to include additional syphilis screening at delivery. However, provider factors and practice settings can influence the translation of healthcare policies into practice. This study explored awareness about the updated prenatal syphilis screening policy and implementation determinants of healthcare policies. **Methods:** We conducted semi-structured interviews with prenatal care providers (certified nurse-midwives, physician assistant, nurse practitioner, and physicians; n=18) based on the Consolidated Framework for Implementation Research (CFIR). Interviews were audio-recorded, transcribed, and thematically analyzed using MAXQDA software. This study explored the individuals, inner setting, and implementation process domains of the CFIR. **Results:** Most of the providers (72%) were certified nurse-midwives. Inner setting facilitators to adopt new healthcare policies included staff meetings, working with physicians and clinic management, and interprofessional collaborations. Among all providers, there was a low awareness of the updated prenatal syphilis screening policy.

However, most providers with no prior knowledge about the screening policy reported that their organization already had a clinic protocol of screening their patients at delivery. Chart reviews, audits, data tracking, and electronic documentation were highlighted as mechanisms to measure the implementation of the syphilis screening policy. However, some providers had limited or no knowledge of any standardized protocols to track the screening activities within their organization. Conclusions: Study findings emphasize the importance of tailored dissemination and implementation strategies to aid translation of prenatal syphilis screening policies in diverse clinic settings, particularly improving awareness of newly enacted and modified policies in response to case increases. Furthermore, more research is warranted to evaluate the implementation fidelity of these policies in clinic settings, thus identifying areas for improvement

### **Examining Providers' and Stakeholders' Perspectives on a Patient Decision Aid Tool for Mid-Adult HPV Vaccination**

Akpan, Idara, N; Wheldon, Christopher, W; Alkhatib, Sarah, A; Grace, Jessica; Daley, Ellen, M; Zimet, Gregory, D; Luningham, Justin, M; Engler, Jonathan; Thompson, Erika, L

**Purpose:** The Advisory Committee on Immunization Practices recommends human papillomavirus (HPV) vaccination for 27-45-year-olds based on shared clinical decision-making (SCDM) with their health care provider (HCP). Studies show varied interpretations and implementation of the SCDM guideline among HCPs. The HPV DECIDE decision tool was developed to facilitate the implementation of the SCDM guideline, particularly in clinic settings. This study explored the perspectives of HCPs and stakeholders on the HPV DECIDE tool.

**Methods:** Between May and August 2023, semi-structured interviews were conducted with HCPs (n=18; internal medicine, family medicine, and OB/GYN providers), and HPV

vaccination stakeholders (n=6; professional organizations, health departments, community clinics). The interview guide was informed by the Consolidated Framework for Implementation Research. Participants reviewed the decision tool. Interview questions explored implementation process strategies (preferred mode of delivery and optimal time for patients to access the tool) and inner setting barriers and facilitators. Interviews were audio-recorded, transcribed, and analyzed using MAXQDA software.

**Results:** Preferred implementation process strategies included an electronic delivery of the decision aid tool and the use of quick response (QR) codes for easy access by patients. The use of physical pamphlets was also mentioned, particularly for patients who may not have access to smart devices. Another process strategy included making the tool available to patients before their clinic consultation, enabling them to be better prepared for conversations about HPV vaccination. Inner setting barriers included time constraints and technological challenges, such as unreliable internet. Facilitators included the integration of the tool with electronic health records and the use of patient portals to disseminate tool.

**Conclusions:** Study findings demonstrate a generally positive perception of the decision aid tool, suggesting that it could be an effective strategy for supporting the implementation of the SCDM guideline in clinical settings. Implementation strategies tailored to clinic settings can aid the SCDM process.

### **Community Design Preferences in a Sample of Interested Buyers of an Agrihood Community**

Maddock, Jay E.; Janda-Thomte, Kathryn M.; Seguin-Fowler, Rebecca; Patterson, Megan S.; Beattie, Cassandra; Vigil, Jacqueline; Carter, Jason R.; Sturdivant, Rodney X.; Umstattd Meyer, M. Renée

**Purpose:** Agrihoods are agriculturally integrated communities intentionally designed/developed to connect people more

closely with their food, nature, physical activity spaces, and neighbors, potentially reducing the environmental impact of transporting foods from distant geographic locations. While increasing in popularity, little is known about desired amenities and willingness to pay for them.

**Methods:** Interested buyers of a newly planned Agrihood in Fort Bend County, Texas were recruited to participate in an online survey in Spring 2024. Participants reported the importance of various aspects of choosing where to live (e.g., price, schools, location), their willingness to pay for specific amenities, and amount of time they would be willing to add to their commute.

**Results:** Participants (n=128) were predominately female (71.4%), ethnically diverse (57% non-Hispanic White), and mostly middle class (54.7% \$50,000-\$150,00 income), with a median age of 38 years. Common measures of home ownership preference, including price (85.2%), quality of schools (53.9%), and location (50.8%), were rated as extremely or very important factors by most respondents. Having safe places to walk (80.5%), peacefulness of the community (73.5%), easy access to nature and outdoor spaces (69.5%), and places nearby to exercise/be physically active (57.1%) were also highly important. Places to interact with others (39.8%), living near “people like me” (34.3%), having a community garden (25%), and organized community events (15.6%) were less frequently rated as essential. Most (83.6%) would be willing to pay more for a house with better walkability, with 25.8% willing to pay \$15,000 or more. Most respondents would pay more and would add time to their commute for nature access, a community garden, or more places to interact with others.

**Conclusions:** Results suggest Agrihoods are desirable among a sample of diverse middle-class homebuyers and serve as an opportunity for public health professionals and developers to collaborate to promote holistic health among residents.

### **Lessons from a systematic review of behavioral interventions to improve maternal outcomes for women at high risk for adverse pregnancy outcomes**

Phipps, Jennifer, E; D'Souza, Indira; Satish, Nikita; Ketchersid, Audriana; Whipps, Mackenzie, D.M.; Van Noord, Megan; Ebong, Imo; Khemet Taiwo, Tanya; Sudhof, Leanna, S; Hedriana, Herman, L; Simmons, Leigh Ann

**Background:** Adverse pregnancy outcomes (APOs) affect 10-20% of American women. APOs are associated with higher risk for cardiovascular disease (CVD), especially in historically marginalized communities (HMCs). Few studies have identified behavioral factors that mitigate or prevent APOs, thereby reducing the quality and quantity of implementable interventions. We conducted a systematic review of behavioral interventions designed for women at risk for APOs, including gestational diabetes and preeclampsia. **Methods:** We searched online databases from January 1, 2005, to May 1, 2024, including PubMed and Cochrane Central Register of Controlled Trials. Two independent reviewers completed each step of the screening, data extraction, and bias analysis processes using PRISMA guidelines. **Results:** Of 3,261 studies screened, 42 publications were reviewed. Behavioral targets included diet, physical activity, sleep, mindfulness training, glucose self-monitoring, or a combination of these. Interventions were designed for pregnant women with an APO, pre-pregnancy obesity, pre-existing CVD risk factors (e.g., hypertension or diabetes), or an APO in a previous pregnancy. Thirty-five trials reported statistically significant health outcomes such as reduced gestational weight gain, postpartum weight retention, or CVD markers (e.g., blood pressure). Interventions that combined diet and physical activity were the most successful at improving maternal outcomes. **Conclusion:** While prenatal interventions have the potential to reduce rising numbers of APOs, more work is needed for high-risk women. Of

the 42 interventions reviewed, there was a lack of focus on interventions that targeted CVD risk factors and an inflated focus on preventing gestational weight gain in women with overweight or obesity. Additionally, few studies considered health outcomes in the context of structural racism and determinants of health, which is a significant gap given high rates of APOs and CVD in HMCs. Future behavioral interventions should focus on cardiovascular markers as outcomes (e.g., blood pressure, blood glucose) and incorporate cultural nuance to address these gaps.

### **CHW Training on Cancer Survivorship: Findings from a Self-Paced 8-hour CEU Curriculum**

Ramirez-Chavarria, Jennifer S.; Myint, Wah Wah; Bolin, Jane

**Background:** Texas A&M's National Community Health Worker Training Center (NCHWTC) collaborated with the Texas Department of State Health Services to design and deliver an online, self-paced 8-hour CEU course called Comprehensive CHW Training on Cancer Survivorship offered in English, since early 2024. This study examines the improvement in cancer-related knowledge amongst the training participants.

**Methods:** Cross-sectional data from the cancer survivorship training (n= 109) was utilized through a 10-question questionnaire using web-based Qualtrics software that asked about the stages of cancer survival, integrative therapies, and palliative care. The correct responses were assigned a one (1) and the false responses were recoded as zero (0). Descriptive statistics and paired t-test of knowledge scores were reported using Stata 18.0.

**Results:** Of 109 participants, about 73% were CHWs (N=80). Other participants included CHWIs, case navigators, case managers, and outreach leads. On a scale from 1 to 10, 44% (n = 48) of participants self-rated that their current knowledge and understanding was more than five in the pre-

test, while 85% (n = 93) of participants self-rated more than 5 in the post test. The cancer knowledge score ranged from 1 to 9 in both pre- and post- training. Almost half (n = 53, 49%) of the CHWs/CHWIs reported, scored five and above. The mean knowledge score improved from pre-test ( $\bar{x} = 4.43$ , Standard Deviation [SD] = 1.44,  $P < 0.001$ ) to post-test ( $\bar{x} = 5.15$ , SD = 1.59,  $P < 0.001$ ). Among the knowledge, more than half (n = 71, 65%) incorrectly answered the question about the three stages of survival that a cancer survivor goes through.

**Conclusions:** The findings suggest that further research is needed regarding how participants can apply knowledge gained from the training into their communities or how to better understand the challenges they face when disseminating the information.

### **Implementation Outcomes of a Suicide Reduction Intervention for Sexual and Gender Minority Emerging Adults**

Tran, Jennifer, T.; Brown, Lily, A.; Webster, Jessica; Burgesse, Tyler; Bauermeister, Jose, A

**Introduction:** Suicide disproportionately affects sexual and gender minority emerging adults (EASGM), yet few interventions currently address their needs by addressing the unique risk factors that predict suicidal ideation and attempts in EASGM. Peer mentoring may serve as a strategy to provide social support and impact feelings of belongingness, as peers are crucial actors in suicide prevention.

**Methods:** STARS is a mobile app that includes a Safety Planning Intervention (SPI) with a licensed clinician, a series of interactive resources and features, and access to six sessions of telehealth peer mentoring. To assess the implementation of STARS, we measured the fidelity of peer mentors (PM) to the training, and their perceived feasibility, acceptability, and appropriateness of the STARS intervention via surveys. We conducted semi-structured interviews with PMs to understand their reflections on lessons learned, insights into

potential modifications, and experienced challenges and opportunities gleaned during implementation.

Results: PMs (N=5; mean age= 25; SD = 1.73) identified as Asian/Asian American (20%), Black/African American (20%), White (40%), and mixed race (20%). All PMs self-identified as a sexual or gender minority. PMs had high fidelity (>90%) to the PM intervention training. PMs reported high feasibility (20 out of 20), acceptability (20 out of 20), and appropriateness (17.5 out of 20) of the STARS intervention. In interviews, PMs stated that they felt “prepared” to provide sessions with peer participants and that the work was “rewarding.”

Discussion: PMs, as crucial team members of a suicide prevention intervention, provided critical insight into the implementation of the intervention. PM’s ability to deliver intervention content was supported by their training, and regular supervision. Findings have implications for the continued use of PMs in suicide reduction interventions for EASGM.

### **The Influence of Social Media Engagement with Vaping Content on Youth Vaping Behavior: Cross-Sectional Study**

Lee, Jeong Kyu; Lu, Yu; Park, Hyun Ah; Martin, Julie; Shin, YoungJu

Purpose: This study aimed to investigate the direct and indirect effects of social media engagement with vaping content on youth vaping behavior, focusing on the mediating roles of flow experiences (focused attention, enjoyment, and time distortion) and attitudes toward vaping. The findings offer insights for developing targeted interventions to prevent youth smoking and vaping through social media platforms.

Methods: Data were collected via a cross-sectional online survey of 1,111 young social media users aged 21-30 years, recruited from a research firm's panel. A path analysis was performed to assess how three types of engagement with vaping content—liking, commenting, and sharing—affected flow

experiences and attitudes toward vaping, which subsequently influenced the frequency of vaping in the past 30 days. Demographic characteristics, such as gender and ethnicity, were included to take into account their potential influence on vaping behavior.

Results: Liking vaping content was the strong predictor of flow experiences, significantly influencing focused attention ( $\beta = 0.127$ ,  $p = 0.006$ ), enjoyment ( $\beta = 0.127$ ,  $p = 0.005$ ), and time distortion ( $\beta = 0.205$ ,  $p < 0.001$ ). Commenting only affected enjoyment, while sharing had no significant effects. Liking also exhibited a direct effect on vaping frequency ( $\beta = 0.204$ ,  $p < 0.001$ ) and an indirect effect through attitudes toward vaping (indirect effect = 0.107,  $p < 0.001$ ). Focused attention, in particular, played a key mediating role in the relationship between social media engagement and positive attitudes toward vaping, which in turn significantly influenced recent vaping behavior ( $\beta = 0.308$ ,  $p < 0.001$ ).

Conclusions: Engagement with social media content, particularly liking, plays a significant role in shaping attitudes and influencing vaping behavior, with focused attention serving as a key mediator. Prevention strategies should prioritize regulating the visibility of pro-vaping content and developing interventions that raise awareness of the risks associated with vaping.

### **Pathways to Binge Drinking: A Mixed-Methods Study on the Role of Sensation Seeking and Drinking Motives**

Lee, Jeong Kyu; Lu, Yu; Lin, Lavinia; Yu, Chi Ying, Meryl

Purpose: This study aimed to explore the complex relationships between sensation seeking, drinking motives, and binge drinking intentions among young adults in Singapore using a mixed-methods approach. The study focused on understanding how sensation seeking influences binge drinking intentions both directly and indirectly through various

drinking motives, with additional insights provided by qualitative interviews.

**Methods:** The study utilized a mixed-methods approach, integrating quantitative survey data with qualitative interviews. The quantitative component involved a cross-sectional online survey conducted with 305 young adults aged 18-34 years in Singapore who reported binge drinking within the past 12 months. Structural Equation Modeling (SEM) technique was used to analyze the direct and indirect effects of sensation seeking on binge drinking intentions. The qualitative component consisted of in-depth semi-structured interviews with 34 participants, selected through purposive sampling, to explore their drinking motives in greater depth. These interviews were analyzed thematically, focusing on the underlying reasons for engaging in binge drinking. The qualitative findings were then integrated with the survey results to provide a comprehensive understanding of the factors driving binge drinking in this population.

**Results:** The quantitative analysis revealed that sensation seeking significantly predicted binge drinking intentions both directly and indirectly through coping and conformity motives. Social and enhancement motives did not significantly mediate this relationship. The qualitative findings supported these results, offering contextual insights into the role of stress-related coping and social conformity in driving binge drinking behaviors. The integration of quantitative and qualitative data provided a more nuanced understanding of the mechanisms leading to binge drinking.

**Conclusions:** This study highlights the importance of addressing stress management and social pressures in interventions aimed at reducing binge drinking among young adults. The qualitative insights further emphasize the need for culturally relevant and gender-specific strategies to effectively address the unique challenges faced by young Singaporeans.

## **Would CBD products reduce opioid misuse? Evidence from National U.S. Survey**

Park, Ji-Yeun

**Background:** In recent years, use of cannabidiol (CBD) products has become an emerging public health trend. Many people use CBD products as self-medications for pain management. While some studies suggested the efficacy of CBD as an alternative to pain medications, evidence on whether CBD use could potentially reduce the misuse of pain reliever is still lacking. Understanding the relationship between CBD use and pain reliever misuse is especially important to inform public health guidelines and recommendations to address the current opioid crisis in the U.S.

**Methods:** Data were obtained from 2022 National Survey on Drug Use and Health. Prevalence of past-year pain reliever misuse was estimated overall and by past-year CBD use status. Afterward, adjusted logistic regression model was performed to examine the association between pain reliever misuse and CBD use, as well as the sociodemographic correlates of pain reliever misuse.

**Results:** Overall, 3.09% of U.S. adults misused pain relievers in the past year. Past-year prevalence of pain reliever misuse was significantly higher among past-year CBD users (6.46%) compared to non-CBD users (2.22%). In fully adjusted logistic regression model, CBD use was significantly associated with pain reliever misuse. CBD users had 1.40 times greater odds of misusing pain relievers compared to non-CBD users. Additionally, use of other substances (tobacco, alcohol, marijuana, heroin, other prescription drug misuse, and other illicit drug use) was significantly associated with pain reliever misuse. Individuals with past-year major depressive episode, those with poor health status, NH-Black, Hispanics, those with lower educational attainment, and those not in labor force were more likely to report pain reliever misuse than their respective counterparts.

Conclusion: Pain reliver misuse was common among CBD users. There is an urgent need for public health intervention targeting CBD users who misuse pain relivers to prevent further misuse and addiction.

### **Pregnancy Intention and Associated Maternal Preconception, Prenatal and Postpartum Behaviors, and Birth Outcomes**

Joseph-Williams, Elizabeth; Chalise, Mariya; Venkatasubramaniam, Priyadarshini; Mealing, Saylor; Ma, Ping

Background: Pregnancy intention significantly influences when expectant mothers seek antenatal care and adverse maternal behaviors. In the US, approximately 45% of pregnancies are unwanted. Yet very few studies assess the impact of pregnancy intention on maternal behaviors and experiences. This study aims to explore how pregnancy intention impacts maternal health behaviors and birth outcomes in American maternal women. Methods: Data from the 2016-2020 Pregnancy Risk Assessment Monitoring System (PRAMS) were extracted for this study. Pregnancy intention was measured as intended and unintended (unwanted, mistimed, and ambivalent). Weighted descriptive, bivariate, and multinomial logistic regression models were conducted to estimate the association between maternal women's pregnancy intention and maternal behaviors (e.g., substance use and mental health), negative lifetime and pregnancy experience (e.g., intimate partner violence/IPV, sufficient prenatal care access) before, during and after pregnancy, and birth outcomes (e.g., low birth weight, small gestational age, preterm and lived birth) with socio-demographic variables adjusted. Results: Of 106,164 maternal women, 6.06% reported unwanted pregnancy, and 17.84% had mistimed pregnancy. Women with unwanted pregnancy had higher odds of experiencing all adverse maternal behaviors compared to intended pregnancy.

Specifically, women with unintended pregnancy were twice as likely to experience depression (adjusted Odds ratio/aOR=2.34, 95% CI: 2.11-2.59) and IPV ((aOR 2.08, 95% CI: 1.63-2.64) and cigarette smoking during and after pregnancy. Furthermore, they were less likely to receive sufficient prenatal care. However, no significant association between pregnancy intention and poor birth outcomes was observed. Conclusion: Our research provides new evidence that pregnancy intentions significantly impact preconception health, maternal health behaviors, and pregnancy experience during pregnancy and postpartum. Therefore, preconception counseling and contraceptive care are warranted for all reproductive-aged women. Future research should focus on exploring family, clinical, and community-level protective factors to reduce the negative consequences of unwanted and mistimed pregnancy.

### **Use of Real-Time Driver Alerts to Improve Commercial Motor Vehicle Work Zone Safety**

Hill, Linda

Purpose: Crashes involving commercial motor vehicles (CMVs) are more likely to result in fatalities and severe injuries than those involving only passenger vehicles, and a disproportionate number of these crashes occur around work zones. Providing CMV drivers with alerts that give advanced warning of work zone activity could reduce the number of crashes, injuries, and fatalities. We hypothesize that alerted drivers will drive at safer speeds, engage in fewer harsh vehicle maneuvers, and remain alert for traffic hazards as they pass through work zones.

Methods: Participants are California-based CMV drivers who subscribe to a mobile application that provides free safety alerts. Experimental group vehicles receive a pop-up notification 500m ahead of active work zones; control group vehicles do not receive alerts. Location data are collected from experimental and control vehicles once per

second beginning 30 seconds before and ending 5 minutes after the alert point. These data are used to determine vehicle speed and changes in speed, which are used to assess driving behaviors.

Results: Data collection began April 1, 2024. Early results through May 21, 2024 (33,826 vehicle visits) indicate that alerted vehicles slowed down sooner and did so at a more steady rate upon entering the alert area. The alerted group also appeared to make more moderate accelerations post- compared to pre-alert, suggesting more cautious behavior compared to the control vehicles ( $p < 0.001$ ). Control group vehicles appeared to decrease their speed later than alerted vehicles and over a shorter period of time, suggesting less awareness of upcoming work zones. Future analyses will be stratified by pre-alert speed, responses to lane-specific vs. general alerts, and unsafe deceleration rates.

Conclusion: In-cab notifications of active work zones in California appear to promote safer driving behaviors among CMV drivers, potentially decreasing work zone crashes and associated deaths and injuries.

### **Pre-Exposure Prophylaxis (PrEP) Care Engagement among Sexual Minority Men (SMM) in the United States during the COVID-19 Pandemic: A Scoping Review**

Ma, Junye

Introduction: The COVID-19 pandemic has significantly disrupted pre-exposure prophylaxis (PrEP) care among sexual minority men (SMM). This scoping review evaluated existing literature on how COVID-19 has affected PrEP engagement among U.S. SMM, considering the variability in pandemic response policies and PrEP regulations. Methods: A systematic search was performed on February 21, 2024, using PubMed, PsycINFO, and Embase. Inclusion criteria were a) English language, b) focus on U.S. SMM, c) academic articles with full text, d) inclusion of empirical data, e) assessment of PrEP care engagement, and f) evaluation of COVID-19's impact on PrEP-related behaviors. Data were extracted using

standardized forms, and study quality was appraised with validated scales. Findings were categorized by the timing of data collection to delineate temporal phases of the pandemic. Results: This review included 22 studies (16 quantitative, 5 qualitative, and 1 mixed-method), with qualitative studies demonstrating better quality than quantitative studies. Most studies were conducted during the lockdown phase, with no investigations spanning the initial outbreak, transition, or post-lockdown phases. Findings indicated a decline in PrEP usage, increased missed doses, and higher discontinuation rates during the pandemic, with only a minority of SMM continued PrEP use. Disruptions in PrEP care included difficulties in obtaining refills/lab tests, attending appointments, and navigating changes in clinic procedures. Youth returning home from college reported concerns about confidentiality around PrEP use. Further, model-estimation studies predicted worsening challenges with PrEP engagement over time. Qualitative evidence highlighted telehealth services and injectable PrEP as promising mitigators of the impact of COVID-19 on PrEP use. Discussion: The findings reveal challenges in PrEP care engagement during COVID-19, a lack of post-lockdown research, and insufficient use of objective PrEP measures. These findings underline the need for proactive emergency preparedness for PrEP services and the expansion of telehealth and home-delivery PrEP services in future public health crises.

### **How psychological safety is related to addiction recovery outcomes: Insights from The Phoenix, a sober-active community**

Heinrich, Katie M; Wyker, Brett; Collinson, Beth; Eddie, David; Best, David; Hillios, Jacquelyn

Background: Psychological safety (PS) exists when individuals are comfortable taking risks and being open with others without fearing negative consequences. PS may benefit people in addiction recovery, by

creating a foundation for learning new skills, adopting healthier behaviors, and gaining valuable resources. However, little research has explored the role PS might play in the recovery process. This study examined relationships between attendance at events hosted by a sober-active community (The Phoenix), PS, and recovery-related growth. Methods: New Phoenix members (N=204, 55% male,  $\text{age}=39.3\pm 11.6$ , 74% White, 38% new-to-recovery) completed a 3-month program-evaluation survey querying recovery status and PS. The survey also assessed hope, connection, empowerment, sobriety motivation, mental health and physical health for now and thinking back to baseline (i.e., “thentest” design). The Phoenix tracked event attendance; all events began with discussion of community standards designed to facilitate psychological safety. Structural equation modeling (SEM) quantified associations between attendance records, PS, and changes in the “thentest” measures; adjusted for recovery status. Results: The measurement model indices indicated a good model fit (RMSEA=0.03, GFI=0.94, CFI=0.99, SRMSR=0.048). All correlations between latent variables were statistically significant ( $p<0.05$ ). The full structural model found good model fit ( $\chi^2=187.40$ ,  $p=0.23$ ; RMSEA=0.049, GFI=0.90, CFI=0.98, SRMSR=0.05.) All path coefficients were statistically significant ( $p < 0.05$ ) with event attendance associated with PS, PS associated with increased hope, connection, and empowerment; hope associated with sobriety motivation, connection associated with mental health, and empowerment associated with physical health increases. Event attendance and physical health were directly associated. The model explained variance for sobriety motivation (25%), mental health (39%) and physical health (35%). Conclusions: This study pioneered the exploration of PS in addiction recovery, revealing its critical association with improvements in hope, connection, empowerment, motivation and health. Results suggest that cultivating PS could be a transformational strategy for enhancing

recovery outcomes and warrants further investigation.

### **Beyond Peer Support: The Impact of Family, Friends, and Allies Volunteering in Addiction Recovery**

Heinrich, Katie M; Collinson, Beth; Hillios, Jacqueline

Background: Recovery community centers (RCCs) offer services where people in recovery, family members, friends, and allies can volunteer to support others. Traditionally, RCCs have fixed locations, but The Phoenix, a non-profit sober active community, has expanded this model with both physical locations and nationwide offerings hosted via community partners for in-person and online events. Despite the central role of volunteers, there is limited research on the experiences of non-recovery volunteers, such as family members, friends, and allies. This study aimed to explore their experiences.

Methods: Four Phoenix volunteers (family member=1, ally=1, living sober lifestyles=2) participated in structured interviews during an in-person event in 2022. Interviews were video recorded and transcribed. Rather than providing direct peer-to-peer support, these volunteers led in-person and online activities (e.g., fitness, art activities). A thematic inductive qualitative analysis was conducted by two researchers using Microsoft Excel.

Results: Six key themes emerged:

1. Making a difference – Volunteers felt they contributed to others’ life journeys and well-being to increase the impact of The Phoenix.
2. Value received – Participants reported personal growth and unexpected community support.
3. Need for The Phoenix – Volunteers emphasized how events made recovery visible, the significance of The Phoenix being open to all recovery pathways, and benefits of engaging non-recovery volunteers.
4. Core recovery concepts – Psychological safety, connection, hope, identity, meaning and purpose, empowerment, and recovery/life capital were central to volunteers’ experiences.
5. Advice

for others – Volunteers offered encouragement along with advice for being consistent and playing to your interests and strengths. 6. Addressing stigma – Volunteers acknowledged confronting and overcoming their own biases

Conclusions: This study highlights the positive experiences of non-recovery volunteers and their impact on The Phoenix community, while also addressing stigma. It underscores the importance of further research on non-peer volunteers in recovery settings.

### **Retail Availability and Price of Ready-to-Drink Alcohol Products, Fort Worth, Texas, 2024**

Tillett, Kayla, K; Rossheim, Matthew, E; Julian, Maria, T; Gerndt, Elizabeth, M; LoParco, Cassidy, R; Balasundaram, Rohit, B; Acrey, Paul, M; Jarvis, Sydney, E; Chauhan, Nadeem; Berg, Carla, J

Background: Policies increasing taxes and reducing availability of high alcohol-by-volume (abv) products are evidence-based measures to reduce alcohol consumption. Despite their ability to identify the need for these policies, alcohol retail surveillance studies are rarely conducted. We developed and used a surveillance tool in Fort Worth, TX to examine the retail availability and price of high abv ready-to-drink (RTD) products, which have become increasingly available throughout the United States.

Methods: We collected data on the retail availability and price of 17 RTD alcohol products (13 with  $\geq 8\%$  abv) and two non-alcoholic products for reference (Coca-Cola and Simply Orange Juice) in Fort Worth, Texas (n=393 retail locations). The study utilized both random (n=300) and convenience (n=93) sampling.

Results: The least expensive alcohol was single-serve containers of Steel Reserve and Four Loko. Steel Reserve 211 (8.1% abv) cost \$0.59 per standard drink for 42oz containers, or \$0.83 for 24oz containers of 211, and \$0.86 for the Alloy Series Seltzer (8% abv, 24oz). Four Loko averaged \$0.67

per standard drink (14% abv, 23.5oz) or \$0.76 for the 12% abv version. The products sold at most locations were non-alcoholic Coca-Cola (20oz, 74.0%), Bud Light (4.2% abv, 25oz, 70.2%), and Steel Reserve Seltzer (8% abv, 24oz, 58.6%). Sensitivity analyses indicated no statistically significant differences in product availability or prices by sampling method.

Discussion: Findings demonstrate the widespread availability of low price, high-abv RTD products, underscoring the need for policies including minimum unit pricing, tax increases, and limits on total alcohol content to reduce hazardous consumption.

### **Cannabis Brands in Vape Shops: United States, 2023**

Tillett, Kayla, K; LoParco, Cassidy R; Rossheim, Matthew, E; Chen-Sankey, Julia, C; Berg, Carla, J; Trangenstein, Pamela, J; Jernigan, David, H

Background: Since the passage of the 2018 Farm Bill, many new types of intoxicating cannabis products (ICPs) are being sold widely throughout the United States. However, there is little information on the popular brands being sold, which is essential for understanding the associated risks, marketing strategies, and major industry players who may oppose effective public health legislation. The current study addresses this knowledge gap by identifying popular ICP brands in vape shops across the U.S.

Methods: In November-December 2023, telephone surveys were conducted for 520 vape shops across all 50 states, Washington, D.C., and Puerto Rico. Google Maps was used to locate 10 vape shops per state/territory: 5 near the Capitol Building and 5 near the largest airport. Shops were asked about the availability and popular brands of THC products. Responses were dual-coded, and descriptive statistics were used to describe popular ICP brands.

Results: Of the vape shops surveyed, 74% reported selling ICPs. Among these, 62% provided brands (N=188 total; average of

5.86 per shop). The top ten brands identified were Torch (12.66%), Mellow Fellow (9.70%), Cake (8.44%), Modus (8.02%), Delta Extrax (7.59%), Hidden Hills (7.59%), Looper (7.17%), Urb (7.17%), Ghost (6.33%), and Space Gods (6.33%).

Discussion: This study is the first to systematically document popular brands of ICPs sold in vape shops nationwide. Findings highlight substantial competition in the marketplace along with many popular brands. These popular brands provide a foundation to help researchers, advocates, and regulators understand market dynamics, monitor risks, and develop policies that mitigate these risks.

### **Higher Alcohol-by-Volume Associated with Lower Price of Alcohol in Ready-to-Drink Products**

Tillett, Kayla, K; Rossheim, Matthew, E; LoParco, Cassidy, R; Livingston, Melvin, D; Treffers, Ryan, D; Siegel, Michael; Jernigan, David, H

Background: Alcohol pricing policies are among the best practices for alcohol control due to their effectiveness in influencing population-level consumption. There has been an emergence of high alcohol-by-volume (abv) ready-to-drink (RTD) products, which have historically been inexpensive; however, there is limited research on the association between abv and pricing of RTD products.

Methods: The current study examines the association between abv and the price of alcohol in RTD products in Fort Worth, Texas. We collected cross-sectional data from online retailers (n=39) systematically identified using Google Incognito mode. We assessed the cost per standard alcoholic drink and associations with abv. We conducted multivariable mixed-effects linear regression models to assess associations between abv and price per standard drink, incorporating fixed effects for liquid volume and store type and random effects for brand. Results: The analysis of 10,680 alcohol products revealed an inverse relationship

between price per standard drink and both abv (unstandardized beta = -5.7,  $p < 0.001$ , 95% CI [-6.6, -4.8]), and total liquid volume (unstandardized beta = -0.4,  $p < 0.001$ , 95% CI [-0.4, -0.4]), suggesting a 'bulk discount' effect that incentivizes purchases of larger quantities of alcohol. Higher abv products tended to afford more alcohol per dollar. Each 1-percentage point increase in abv was associated with 5.7 cents lower price per standard drink.

Discussion: Targeted regulatory strategies can mitigate alcohol-related harms by considering package size and abv regulations as indirect pricing policies. These strategies could help to reduce the economic incentives for purchasing high-abv products, particularly in larger quantities.

### **Exploring Healthcare Professionals' Views on Barriers to Access and Continuity of Perinatal Health Care: A Qualitative Study**

Gregory, Kayleigh, A.; Hill, Madelyn, J.; Dzimbiri, Mastano; Merianos, Ashley, L

Purpose: Perinatal mood disorders are the leading cause of maternal perinatal mortality and impact an estimated 15-21% of pregnant and postpartum women. Research indicates that social and economic factors, racism, and persistent stress contribute to maternal and infant health outcomes. Healthcare professionals play a key role in assisting perinatal mothers with their mental health and addressing systemic disparities that may impact access to care. Understanding healthcare professionals' perceptions is the first step in tailoring existing evidence-based interventions, implementing training in these settings, and providing patient-centered care during this period. This study aims to identify barriers to accessing and maintaining continuity of perinatal care, and to understand specific obstacles observed by healthcare professionals during this time.

Methods: We used a purposive sampling technique to recruit 19 participants comprising OBGYN providers, nurse practitioners, and certified nurse midwives

who work in Ohio, Kentucky, and Indiana. Semi-structured interviews with open-ended interview questions were conducted with the participants. Qualitative data were analyzed using thematic analysis, and main themes emerged from the transcripts.

**Results:** Participants emphasized the numerous barriers hindering their patient's ability to access perinatal healthcare services. These included logistical challenges, such as transportation, insurance coverage, financial reasons, homelessness, food insecurities, having multiple children, and lack of time to attend visits. Additionally, participants expressed that certain racial/ethnic groups and those with language barriers were more vulnerable to facing challenges in accessing care.

**Conclusions:** Study findings provide a comprehensive view of common barriers faced by individuals in the perinatal period. These findings provide insight on both patient- and systemic-based barriers while filling gaps in research that may have been previously underreported by patients. Overall, results may offer evidence for improving access and continuity in perinatal care, and thus, improve the mental and physical health of mothers and their children.

### **A Qualitative Comparative Analysis of Collaborative Care Success Factors in the Maternal Infant Dyad Implementation (MInD-I) Study**

Kearney, Matthew, D; Barg, Fran, K; Bhat, Amritha; Grover, Tess; Vredevoogd, Melinda; Bracy, Danny; Bennett, Ian, M

**Purpose:** Detection and management of perinatal depression is poor, particularly for women from historically underserved populations. We wished to identify factors associated with successful implementation of Collaborative Care Model (CoCM) for perinatal depression in sites providing maternal and pediatric care to historically underserved populations such as those with low income or from race/ethnic minority communities.

**Methods:** Twenty clinics in the Maternal Infant Dyad Implementation (MInD-I) national study were included. Semi-structured interviews were conducted with site care managers, practice coaches, psychiatric consultants, project leaders/champions, and practice facilitators at 6-, 12-, and 21-months post-implementation informed the identification of specific conditions associated with successful implementation. Qualitative comparative analysis (QCA) was carried out with 5 conditions and CoCM metrics including patient enrollment. CoCM competency was determined by achieving key procedural goals of this model.

**Results:** All sites were staffed with care managers throughout the duration of the study, whereas 82% (n=14) of sites had formal project leaders, project associated clinicians, and psychiatric consultants. QCA modelling identified combinations of seven (7) conditions considered sufficient for sites achieving competency, including having a formal project leader (consistency score=.65), tangible support from leadership (.55), leadership familiarity with MInD-I (.64), consistent staffing by a psychiatric consultant (.78), dedicated resources and materials (.73), and having at least 20+ enrolled patients (.69).

**Conclusion:** Leadership, staffing and available resources were important factors in determining whether MInD-I sites achieved competency. Furthermore, having achieved patient care volume targets was also associated with site competency. These areas should be targeted in future implementation efforts.

### **Training Needs and Evidence-Based Practices in Trauma-Informed Reproductive Healthcare**

Loeliger, Kelsey, B.; Matticks, Zoe; Jain, Tanya; Begna, Hannah; Schwarz, Eleanor, B.; Shankar, Megha

**Introduction:** Trauma, including adverse childhood experiences and violence, is associated with increased rates of sexually

transmitted infections, perinatal complications, procedure-related pain, and a need for emergency contraception, abortion, and more complex family planning services. Trauma-informed care (TIC) promotes health equity and is a pillar of compassionate reproductive healthcare. Practicing clinicians and trainees, particularly those who provide family planning services, may be at risk for burn-out when they do not feel prepared for or supported in providing TIC.

**Methods:**We assessed needs for training in trauma informed care (TIC) among a national sample of Complex Family Planning fellows. We developed and evaluated an evidence-based, interactive training workshop, comparing pre- and post-training survey responses using Wilcoxon Signed-Rank tests.

**Results:** Most (79%, n=22) eligible fellows completed the needs assessment, with 91% reporting needs for additional TIC training. Of the 18 who attended a subsequent training workshop, all reported caring for high-risk populations, but 11% had no prior TIC training and 28% reported 2 hours or less of training. Forty-four percent had not received trauma-informed pelvic exam training. Workshop attendance significantly increased provider comfort with trauma inquiry (83% post vs. 56% pre, p=0.02), responding to trauma (95% vs. 67%, p=0.004), performing a pelvic exam (95% vs. 83%, p=0.02), and discussing pain management options (100% vs. 83%, p=0.06) with patients with a trauma history. Many (83%) reported secondary trauma related to patient care, and 89% reported that workshop participation helped alleviate this distress. All participants felt that their training needs were met and that they would use the material discussed in their future clinical practice.

**Conclusions:** An interactive workshop providing practical evidence-based approaches to providing trauma informed family planning care significantly improved clinician comfort in TIC. TIC training and clinician peer support are important to optimizing clinician resilience, improving

patient experiences, and strengthening the clinician-patient relationship.

### **Assessment of Barriers to TB Service Delivery in Namayumba, Uganda**

Kim, Lana, E; Dey, Annesha

**Purpose:** The purpose of this study was to identify and assess barriers to Tuberculosis (TB) service delivery in rural Namayumba, Uganda. **Methods:** In collaboration with Kiyita Family Alliance for Development (KIFAD) and Namayumba Health Center IV, 48 confirmed TB-positive patients were given an in-person survey to assess their satisfaction with three areas of TB service delivery—education/awareness, communication, and follow-ups. The survey included primarily “yes” or “no” questions. Furthermore, 16 “key informants” from various levels of healthcare leadership (e.g. physicians/nurses, traditional healers, lab technicians, etc.) participated in qualitative interviews to assess their perception of TB service efficiency based on their clinical experiences. **Results:** Four challenges were identified as significant, region-specific barriers to equitable TB service delivery in Namayumba: (1) low community sensitization to TB and awareness of screening/treatment services, furthering HIV-related stigma and discouraging individuals from seeking/completing treatment; (2) unaffordable transportation costs over long distances, resulting in missed appointments/follow-ups; (3) nutritional instability, as TB medication requires food consumption; (4) lack of education on medication-induced side effects before beginning treatment, many of which frightened and deterred patients from continuing treatment. **Conclusions:** Due to its association with HIV/AIDS, TB screening and treatment is heavily stigmatized within this community, with patients facing violence and social ostracization. As rural communities remain uninformed about TB symptoms and available screening/treatment/contact tracing services, more efforts towards community

education and sensitization are essential to alleviating these barriers. Additionally, with 79.1% of households in Namayumba living below the poverty line, the additional cost of TB care creates significant financial burdens that hinder TB treatment adherence. Ultimately, these findings will direct KIFAD's future TB service delivery protocol, including our suggestions for increased community education sessions, food, and emergency transport fund provisions, and door-to-door screening/drug delivery.

### **Neighborhood influences Knowledge and Perceived Competency Around Opioid Overdose and Naloxone Administration in A Probability Sample of Indiana Urban Communities with Large Black Populations, 2023**

Lee, Shin Hyung; Seo, Dong-Chul

**Background:** Despite widespread naloxone distribution efforts, racial disparities in opioid-related deaths persist, highlighting barriers to effective overdose intervention. This study evaluated knowledge and perceived competency regarding opioid overdose and naloxone administration ("KCON" hereafter) among urban Indiana residents.

**Methods:** As part of a federally funded project (#CPIMP221346), the Indiana University Center for Survey Research conducted community probability surveys from March to May 2023, sampling 772 residents in Indiana's urban communities across 8 zip code areas. The study explored individual- and community-level factors affecting residents' KCON.

**Results:** Multilevel analysis identified race/ethnicity as well as sex, household income, age group, education, and a history of opioid overdose as significant predictors of knowledge, with Black, Other, and Latine participants scoring lower than their White and non-Latine counterparts. Participants who identified as White scored a mean of 6.65, those of other races scored 5.75, and Black participants scored 5.70 out of 10 ( $p < 0.001$ ). However, the perceived competency did not significantly differ by race. The

intraclass correlation showed that 2.8% of the variance in knowledge was attributable to differences by zip code. In terms of perceived competency, only age group and a history of opioid overdose were significant predictors. **Conclusions:** These findings underscore the importance of community education to increase KCON among Black and Latine populations. An evaluation of the long-term impact of community-level KCON and community-based initiatives to increase KCON among Black and Latine residents is imperative.

### **Perspectives on Genetic Testing for Autism Spectrum Disorder among Autistic Adults: An Exploratory Qualitative Study Guided by the Health Belief Model**

Li, Ming; Anderson, Connie; Chen, Xuewei; Kreps, Gary

**Purpose:** Genetic testing for autism is sometimes recommended by health organizations for individuals diagnosed with autism spectrum disorder (ASD) to identify related genes. While previous studies have examined parental attitudes toward ASD genetic testing, there is limited research on the views of autistic adults. The Health Belief Model (HBM) asserts that beliefs about health issues drive health behaviors, such as seeking genetic testing. Therefore, this study explores autistic adults' beliefs regarding ASD genetic testing.

**Methods:** Individuals were eligible to participate in this study if they were 1) self-reported diagnosed with ASD; 2) 18 years or older; 3) able to communicate in English; and 4) able to provide informed consent for themselves. We recruited participants from six ASD organizations and one college campus. 28 respondents completed the semi-structured qualitative interviews.

**Results:** The average respondent age was 28.4 years (range: 19-40,  $SD=6.8$ ). Nearly half were male ( $n=13$ , 46.4%), with twelve (42.9%) identifying as female and three (10.7%) as nonbinary. Most respondents identified as White/Caucasian ( $n=19$ ,

67.9%), followed by Black/African American (n=5, 17.9%), Asian American (n=3, 10.7%), and Hispanic/Latino (n=1, 3.6%). Nearly half of the respondents disagreed or were ambivalent about genetic testing for ASD. Their reasons included worries about eugenics and beliefs that identifying certain autism-related genes would reinforce views of ASD as a disorder rather than a form of neurodiversity. While most participants indicated potential interest in receiving ASD genetic testing in the future, respondents raised concerns about the misuse of genetic information, ethical issues, genetic data security, and financial cost/insurance coverage for the test.

**Conclusions:** Compared to the predominantly positive attitudes toward ASD genetic testing among parents with autistic children, some autistic adults exhibited significant concerns about this medical technology. There is a need for evidence-based guidelines and educational programs to address these concerns regarding ASD genetic testing.

### **Who are the female smokers? Association between occupational factors and smoking behavior among female workers in Taiwan**

Wong, Su-Wei; Yang, Meng; Ou, Tzung-Shiang; Yuan, Jiaqi; Lin, Hsien-Chang

**Background:** Over the past three decades, Taiwan experienced a significant reduction in adult overall smoking prevalence, from 32.5% in 1990 to 14% in 2022, largely attributed to various tobacco regulations (e.g., elevated taxation and bans). While smoking prevalence among male adults declined drastically, smoking prevalence among female adults remained stable, fluctuating between 2.3% and 4.8%. Characteristics of female smokers were rarely identified, particularly in relation to occupational factors. This study aimed to address this gap by examining the associations between occupational factors and smoking among females in Taiwan.

**Methods:** This study extracted a sample of employed females aged 18 and above (n=10,876) from Taiwan's 2016 and 2022 Survey of Perceptions of Safety and Health in Work Environment to examine associations between occupational characteristics and past-month smoking status. Logistic regression assessed the associations between smoking status and work-related factors including nineteen occupation types, hiring conditions, and work environments, adjusting for sociodemographics and year.

**Results:** Female workers in 1) Accommodation and Food Services, 2) Support Services (e.g., cleaning and building security), and 3) Arts, Entertainment, and Recreation were more likely to smoke (ORs=1.68, 2.04, 2.99; all ps<.05), whereas those in 1) Public Administration and 2) Healthcare and Social Work were less likely to smoke (ORs=0.25, 0.52, both ps<.05), comparing to those in Manufacturing. Additionally, female workers in unshaded outdoor settings were more likely to smoke (OR=2.22, p<.001), compared to indoor settings.

**Conclusion:** This study is the first to highlight significant occupational disparities in smoking behavior among female workers in Taiwan. These results underscore the need for targeted tobacco control interventions that address both occupational and sociodemographic characteristics specific to female smokers. Tailored strategies, such as workplace-based smoking cessation campaigns and policies focused on high-risk occupational groups, may be crucial in reducing smoking rates among women and eliminating gender disparities in smoking prevalence.

**The association between nicotine concentration in ENDS products and urinary cotinine level among U.S. adult ENDS users**

Yang, Meng; Wong, Su-Wei; Ou, Tzung-Shiang; Yuan, Jiaqi; Lin, Hsien-Chang

**Background:** Electronic nicotine delivery systems (ENDS) have become increasingly popular among adults as alternatives to traditional tobacco products. The relationship between nicotine concentration in ENDS and resulting nicotine exposure in users remains uncertain due to the complex effects of varying use intensity (e.g., number of puffs per use). This study aimed to evaluate the association between nicotine concentration levels in ENDS products and levels of urinary cotinine, a key biomarker of exposure for nicotine, among past 30-day adult ENDS users.

**Methods:** This cross-sectional study analyzed data from Wave 5 (2018-2019) adult questionnaire and biomarker dataset of the restrict-use Population Assessment of Tobacco and Health (PATH) Study. Participants who reported using ENDS in past 30 days were included in the study, where those who had used nicotine replacement therapy or other tobacco products within past 3 days were excluded to minimize confounding source of nicotine exposure (final unweighted N=176; weighted N=449,923). A weighted linear model was employed to investigate the association between nicotine concentration of ENDS products and creatinine-adjusted urinary cotinine levels, controlling for sociodemographic and ENDS usage factors (i.e., frequency, quantity, and average puffs per use over the past 30 days).

**Results:** Participants who used ENDS products with nicotine concentrations >50 mg/mL (vs. ≤50 mg/mL) had significantly higher creatinine-adjusted urinary cotinine levels ( $\beta=692.29$ ,  $p<0.001$ ).

**Conclusions:** Findings of this study that employed biomarker data highlight the risks associated with using ENDS products with high nicotine concentrations. Our findings

indicate that users of high-concentration ENDS are exposed to substantially higher nicotine levels, potentially increasing their risk for nicotine dependence and other associated health consequences. Regulatory efforts that reduce nicotine concentrations in ENDS products to minimally addictive levels may be necessary to protect users from excessive nicotine exposure. Further research is needed to explore the long-term health effects and impact of regulatory interventions.

**Association between ENDS characteristics and urinary cotinine level among U.S. youth who exclusively use ENDS**

Yang, Meng; Ou, Tzung-Shiang; Wong, Su-Wei; Yuan, Jiaqi; Lin, Hsien-Chang

**Background:** The rising popularity of electronic nicotine delivery systems (ENDS) among youth raises significant concerns regarding nicotine exposure and related health impacts. ENDS characteristics, particularly the diverse types of devices, may result in varying levels of nicotine exposure. This study aimed to explore the association between different ENDS device types and levels of urinary cotinine, a key biomarker for nicotine intake, to better understand the risks linked to ENDS characteristics.

**Methods:** This cross-sectional study analyzed data from Wave 5 (2018-2019) youth questionnaire and biomarker dataset of the Population Assessment of Tobacco and Health (PATH) Study. Youth participants who exclusively used ENDS in the past 30 days were included (unweighted N=233; weighted N=1,181,278). After verifying the proportional odds assumption, a weighted ordered logit model was utilized to estimate the relationship between ENDS device types and tertile-categorized, creatinine-standardized urinary cotinine levels (low, middle, and high), controlling for relevant sociodemographic and ENDS usage factors (i.e., frequency, quantity, and average puffs per use over the past 30 days).

Results: The tertile cut points for urinary cotinine levels were <3.67 ng/g (low), 3.67-351.08 ng/g (middle), and >351.08 ng/g (high). After adjusting for covariates, youth using disposable ENDS were found to have significantly higher urinary cotinine levels compared to those using tank system box-style ENDS (OR=8.41,  $p<0.05$ ). Additionally, for each additional day of ENDS use in the past 30 days, the odds of having a higher urinary cotinine level increased by 18% (OR=1.18,  $p<0.001$ ).

Conclusions: Our results suggested that youth who use disposable ENDS had much higher levels of urinary cotinine compared to those who use tank system box-style ENDS. These findings highlight the importance of considering device type when assessing nicotine exposure among youth. Public health strategies should specifically address the heightened risks associated with disposable ENDS to mitigate nicotine-related harm in this vulnerable population.

### **Financial Incentives for Smoking Cessation among (expectant) Parents: A Systematic Review of Facilitators and Barriers to Implementation**

van der Spek, Linda; Breunis, Leonieke, J.; Bauld, Linda; Ista, Erwin; Scheffers-van Schayck, Tessa; Been, Jasper, V

Introduction: Financial incentives, provided upon validated smoking cessation, hold substantial potential to cost-effectively promote cessation. To facilitate wider adoption, the purpose of this study was to systematically review evidence addressing the barriers and facilitators to successful implementation of incentive-based smoking cessation interventions among (expectant) parents.

Methods: We conducted a systematic search to identify scientific and grey literature reporting and reflecting on the implementation of smoking cessation programs with incentives for (expectant) parents. Characteristics of the studies, interventions, incentives and implementation were collected, along with barriers and

facilitators. Qualitative and quantitative findings were thematically analyzed and then synthesized in tabular and narrative form. Subgroup analysis discerned barriers and facilitators specifically in populations with a lower socioeconomic status.

Results: The search yielded 691 unique scientific and 273 unique grey literature records. The 34 included records were published between 2000 and 2023 and reported on implementation endeavors in the USA ( $n = 18$ ), UK ( $n = 7$ ), Australia ( $n = 3$ ), the Netherlands ( $n = 2$ ), and New Zealand ( $n = 1$ ), and indirectly on implementation in France, the UK or internationally ( $n = 3$ ). Pregnant women were the primary target population of all interventions described. Few additionally targeted a woman's close contact ( $n = 3$ ), or women in the preconception ( $n = 1$ ) or post-partum ( $n = 1$ ) phase. Implementation barriers related, most importantly, to misalignment with participants' context and resources, recruitment and retention challenges, limited reliability of biochemical validation of abstinence and high time and resource demands. Major facilitators included ensuring the acceptability, accessibility and feasibility of intervention designs.

Conclusion: This systematic review is the first to highlight the barriers and facilitators to implementing financial incentives for smoking cessation among (expectant) parents. With the cost-effectiveness of these incentives already well-documented, our findings offer valuable guidance for advancing much-needed implementation efforts.

### **Does message quality lead to an increase in HPV vaccination knowledge among parents? A mediation analysis**

Lo, Wen-Juo; Leader, Amy; Chiang, Shawn; Murray, Regan, M; Klassen, Ann; Guan, Mengfei; Manganello, Jennifer; Massey, Philip, M

While the human papillomavirus (HPV) vaccine was approved in the United States more than 15 years ago, knowledge about

the vaccine and virus remain suboptimal. How to best convey information to overcome the knowledge deficit remains unclear. This study explored how personal characteristics, initial vaccination intentions, and the format of HPV vaccine communication (narrative vs. non-narrative) influenced parents' perceptions of message quality (usefulness, ease of understanding, engagement) and their knowledge acquisition. A sample of 508 U.S. parents with children aged 9-14 years were recruited through an online survey and randomly assigned to receive either narrative ( $n = 250$ ) or non-narrative ( $n = 258$ ) HPV vaccine information. While both formats contained identical factual content, the narrative group received personal stories, while the non-narrative group received scientific text. Path modeling was used to test whether message quality mediated the relationship between personal or message characteristics and knowledge acquisition. Results showed the model demonstrated good fit to the data:  $\chi^2(7) = 13.955$ ,  $p = .052$ ; CFI = .990; SRMR = .025; RMSEA = .044). The path model explained 46% of the variance in HPV knowledge, indicating that the predictors accounted for a substantial proportion of the variance in knowledge. Parents' pre-existing HPV vaccination intention influenced their perceived usefulness of information ( $\beta = 0.487$ ), and engagement with the material ( $\beta = 0.214$ ). Narrative communication was associated with lower perceived usefulness compared to non-narrative communication ( $\beta = -0.155$ ), although no significant difference was found in ease of understanding between the groups. Males found the information easier to understand ( $\beta_{\text{males}} = 0.223$  vs.  $\beta_{\text{females}} = -0.142$ ) but had lower HPV vaccine knowledge compared to females. These findings underscore the importance of both message format and initial attitudes in shaping parents' knowledge of the HPV vaccine, with engagement playing a critical mediating role.

### **Exploring Extreme Responses: How Likert Scale Length Influences Attitudes Toward Abortion in Public Health Surveys**

Lo, Wen-Juo; Turner, Ronna; Crawford, Brandon; Jozkowski, Kristen

The summative rating scale, first introduced by Likert (1932) with his 5-point format, has been widely adopted in public health research to quantify people's behaviors, attitudes, and perceptions. Established guidelines for scale development (Krosnick & Presser, 2010) have provided structure for its implementation. However, limited research has examined whether the length of response options may influence respondents to provide more extreme responses, particularly on polarized issues like vaccine acceptance or abortion. This study aims to compare the use of five common Likert scales (2-, 4-, 5-, 6-, and 7-point scales) to assess if response extremity varies when measuring attitudes toward legal abortion. A total of 1,673 participants were recruited via the Prolific panel and randomly assigned to one of five online survey conditions, each featuring different lengths of response options. This analysis focused on six items adapted from the General Social Survey (GSS), which measured attitudes toward abortion in specific circumstances. ANOVA was conducted to assess differences in the proportion of extreme responses across the various Likert scales. The results revealed that the traditional Agree/Disagree format, commonly used in telephone surveys, significantly differed from the other scales, with 43.9% of participants providing extreme responses. For the remaining four formats (i.e., 5-, 6-, and 7-point scales), the results did not reveal significant differences. However, the 4-point scale elicited slightly higher extremity (28.4%) compared to the other three formats, which ranged from 24.9% to 26.6%. These findings suggest that binary response options may lead to an overrepresentation of extreme attitudes. Therefore, we recommend using Likert-type scales with 5, 6, or 7 points when designing surveys to assess attitudes, as these scales

appear to minimize extreme responses and provide more nuanced data.

### **Information Seeking and Advice Networks for Contraceptive Decision-Making Among College-aged Women in Peru.**

Guerra-Reyes, Lucia; Promei, Noor-E-Afroz

**Background:** Accessing unbiased and timely sexual and reproductive health (SRH) information is vital for young women's health rights. Despite multiple information sources, learning about contraception remains challenging. Previous studies suggest that personal advice networks (egocentric social networks) influence reproductive choices, including contraception use. This study investigates contraceptive decisions, information-seeking behaviors, and the advice networks of college women in Lima and Tarapoto, Peru.

**Methods:** We recruited sexually active women over 18 from two universities who were not seeking to conceive. Participants reported their contraceptive information-seeking behaviors, perceptions of SRH knowledge, and contraceptive use history. They identified up to five individuals who provided contraceptive advice, allowing us to characterize their personal advice networks. Our final sample consisted of 283 respondents: 124 from Lima and 159 from Tarapoto.

**Results:** Most women rated their contraceptive knowledge as moderate to high, with more respondents in Tarapoto considering their knowledge very high. The most commonly used contraceptive methods were male condoms and pills, followed by emergency contraception and withdrawal; Tarapoto women also reported higher use of herbs and the calendar method. Information was primarily sought from clinicians, the internet, and female friends, while mothers and partners were more frequently consulted in Tarapoto. Advice networks were small (around three individuals) and predominantly female, mostly comprising friends.

**Conclusion:** Social and familial relationships significantly influence contraceptive decisions. While women seek information from healthcare providers and online sources, they predominantly rely on informal networks of female friends for advice. Gender norms continue to shape contraceptive discussions, highlighting the intricate interplay of personal preferences, relational dynamics, and information access in determining contraceptive choices in these regions

### **Concordance between parents' HPV vaccination intention for themselves and their children**

Lunningham, Justin, M.; Maness, Sarah, B.; Wheldon, Christopher, W.; Akpan, Idara, N.; Alkhatib, Sarah, A.; Grace, Jessica; Thompson, Erika, L

**Purpose:** The Advisory Committee on Immunization Practices (ACIP) recommends human papillomavirus (HPV) vaccination for 27-45-year-olds (mid-adults) based on shared clinical decision-making (SCDM) with their healthcare provider. ACIP also recommends routine vaccination for children ages 9-17. Because mid-adult HPV vaccination guidelines are relatively new, few studies have examined parental intentions regarding their own vaccination in relation to their child's vaccination. In this study, we investigated dyadic relations between parent-reported HPV vaccine intention for themselves and their child, as well as their child's vaccination status. **Methods:** Unvaccinated adults aged 27-45 (N=632) completed questionnaires as part of a larger randomized HPV vaccination trial. Participants were asked how likely it was for them to receive the HPV vaccine (5-point scale). Participants were asked if they had a child ages 9-17, if the child had received the HPV vaccine, and if not, how likely it was that the child would be vaccinated (5-point scale). Descriptive statistics, chi-square tests, and correlation tests examined the concordance between parent intentions toward their own vaccination compared to their child's

vaccination. Results: Overall, 228 participants had children aged 9-17. Among those, 68 (30%) were vaccinated, and 136 (70%) were unvaccinated (24 parents preferred not to answer). There were no significant differences on parents' intention to receive the HPV vaccine based on the vaccination status of their child. There was a significant positive correlation between parents' vaccination intention for themselves and their unvaccinated child ( $r=0.58$ ,  $p<0.001$ ). Conclusions: Study findings indicate that parents have similar HPV vaccine intentions for themselves and their child. This has implications for the impact of SCDM with mid-adults on their child's vaccination. Messaging for mid-adults should emphasize the importance of HPV vaccination for all those eligible. Funding: This project was supported by the Merck Investigator Studies Program

### **Demographics and Health Behaviors among Interested Buyers of an Agrihood Community**

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Purpose: Agrihoods are agriculturally-integrated communities intentionally designed/developed to connect people more closely with their food, nature, physical activity spaces, and neighbors. While increasing in popularity, little is known about who decides to live in these communities and the effects on their health behaviors. This study aims to assess whether interested home-buyers of an Agrihood engage in health behaviors related with mental and physical health and if they come from diverse populations.

Methods: Participants were recruited to complete an online survey through the developer's online website and email listservs for potential buyers of a newly planned Agrihood in Fort Bend County, Texas. Participants self-reported their

demographic characteristics and health-related behaviors including time spent in nature, physical activity, sleep, and self-rated overall health.

Results: 128 adults completed surveys between March and July of 2024. Participants were primarily female (71.4%), ethnically diverse (15.6% Black, 12.5% Hispanic, 13.3% Asian), and mostly middle class (54.8% \$50,000-\$150,000 income). About two-thirds (64.8%) currently own a home, and 49% have children living in their home. Ages ranged from 22 to 81 years (median=39 years), and 87.5% had a college degree. In a typical week, 39.4% reported spending < 1 hour/week in nature, 32.7% reported sleeping < 7 hours/night, and 52.2% reported being in very good or excellent health.

Conclusions: Among a sample of adults considering moving to an Agrihood, participants were diverse in age, race/ethnicity, and income. The sample was highly educated, predominantly female, experiencing little nature contact, with nearly 1/3 of the sample reporting sleeping below national recommendations. Future research is needed to determine if purchasing within an Agrihood improves preventive health behaviors known to impact the mental and physical health of middle-class Americans.

### **The role of Resilience on Diabetes-Related Health Outcomes in African American Adults**

Ganesh, Nithila; Koirala, Alija; Welsh, Ashley; Wang, Tianyu; Saba, Victoria; McLaurin, Natalie; Tanaka, Hirofumi; Steinhardt, Mary

Purpose: Daily self-management of type 2 diabetes can be stressful. Resilience, the ability to adapt effectively with adversity and regulate one's emotions, may support daily self-management and help prevent long-term complications. This study aimed to examine associations between resilience and diabetes-related mental and physical health outcomes in African American adults with type 2 diabetes. Methods: Participants

(N = 284, 72% female, 62±11 years old, diagnosis duration 11±9 years) were recruited through local churches and assessed for resilience (adaptation to stress, CD-RISC-10; emotional dysregulation, DERS-16), mental health (depressive symptoms, PHQ-9; diabetes distress, DDS-4; perceived stress, PSS-10), and physical health (HbA1c, DCA Vantage™ Analyzer; sedentary behavior, wrist-worn actigraphy; diabetes self-management, 12 item SCI-R). Associations among resilience and health outcomes were assessed with Pearson correlation coefficients. Results: Adaptation to stress was moderately and inversely associated with depressive symptoms ( $r = -.37$ ), diabetes distress ( $r = -.31$ ), and perceived stress ( $r = -.45$ ) (all  $p < 0.01$ ). Emotional dysregulation was positively and more strongly associated to mental health indicators including depressive symptoms ( $r = .68$ ), diabetes distress ( $r = .56$ ), and perceived stress ( $r = .68$ ) (all  $p < 0.01$ ). Adaptation to stress demonstrated weak but statistically significant associations with all physical health indicators including HbA1c ( $r = -.13$ ), sedentary behavior ( $r = -.12$ ), and diabetes self-management ( $r = .12$ ), whereas emotional dysregulation was only inversely related to diabetes self-management ( $r = -.18$ ;  $p < .01$ ). Conclusions: Greater resilience was associated with better diabetes-related health outcomes, particularly mental health outcomes. Resilience-based diabetes self-management and support programs may help African American adults with type 2 diabetes manage health-related challenges associated with the disease.

### **Characterizing the Relationship between Moral Injury and Alcohol Use among Veterans: A Behavioral Economic Perspective**

Crunk, Ian; McDaniel, Justin, T.

Purpose: Moral injury - defined as damage to a person's capacity to feel and act like a moral agent due to having perpetrated or borne witness to an act that violates a person's deeply held normative beliefs - is an

emerging psychological construct that is reported with high frequency among military veterans. Studies show that moral injury manifests in symptoms such as anger, guilt, or shame, and is associated with adverse outcomes, including suicidality; however, few studies have characterized the association between moral injury and alcohol use among veterans, particularly from a behavioral economic perspective.

Methods: We recruited military veterans ( $n = 28$ ) from Amazon MTurk for a cross-sectional survey study. Consenting participants completed the Moral Injury Purchase Task (MIPT; McDaniel et al., 2023), which is a behavioral economic tool designed to measure moral injury severity in veterans, and the Alcohol Use Disorders Identification Test-Concise (AUDIT-C; Bradley et al., 2003), as well as some sociodemographic questions. We derived a demand curve on the MIPT and calculated various behavioral economic demand indices (i.e., Intensity, Pmax, Omax, Breakpoint, Alpha) in an effort to quantify moral injury severity. We also summed scores on the 3-item AUDIT-C and regressed those scores on the previously described demand indices, while controlling for age, sex, race, income, and education.

Results: Participants had an average age of 39.36 years ( $SD = 7.11$ ), were mostly male (71.43%), and primarily white (89.29%). Results showed that two of five demand indices (Intensity,  $b = 0.04$ ,  $p = 0.04$ ; Omax,  $b = 0.01$ ,  $p = 0.01$ ) were significantly positively associated with alcohol use.

Conclusions: These preliminary results suggest that moral injury may be a risk factor for alcohol misuse, but continued research is needed to better characterize the relationship.

### **Evaluating the Impact of a Food Recovery Program on Food Insecurity in Los Angeles County: A Systems Science Approach**

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In Los Angeles County (LAC), over 25% of households are food insecure, more than twice the national average. At the same time, over 4,000 tons of food are wasted every day. Efforts to address food waste and food insecurity are evolving; recent mandates require organizations to minimize food waste by donating edible food that would otherwise go to landfill. However, the infrastructure to implement these initiatives is limited. During the pandemic, Hollywood Food Coalition (HFC), a non-profit organization, responded, acting as an intermediary between food producers / food recovery and groups and organizations who carry out food distributions for their own communities. HFC assisted with the redistribution of large food surplus donations, and established a Community Exchange Program to receive/repackage/redistribute recovered food to organizations with specific food preference that represent the communities that serve. This program continues and has provided over > 7m pounds of rescued food to > 160 local nonprofits since its inception. Stakeholders are interested in assessing the potential health impact of this program when scaled up. Using the Consolidated Framework for Implementation Research, our interdisciplinary team collaborated with HFC to develop a causal loop diagram (CLD) to identify the mechanisms behind multiple factors that influence the impact of HFC's innovative effort to address food insecurity while minimizing food waste. From the CLD, a discrete event simulation model was constructed, incorporating food recovery and distribution data collected by HFC and other relevant information such as staffing and storage space. This model will be polished

and presented to stakeholders to illustrate the potential health impact of scaling up this program in LAC. In addition, the identified mechanisms by which the Community Exchange Program affects food insecurity and health will allow for the identification of critical steps and resources for evaluating the program and translating it in other contexts.

### **Building Bridges: The Role of Social Connections in Recovery from Substance Use Disorder within a Sober Active Community**

Patterson, Megan S; Heinrich, Katie M.; Francis, Allison N.; Prochnow, Tyler; Valdez, Danny;

Introduction: Professional treatment can help manage substance use disorder (SUD), but only 10% of the 40.3 million people needing treatment receive care. Social connectedness and support are key predictors of long-term recovery, and exercise is linked to reduced substance use, cravings, and psychological distress in people with SUDs. The Phoenix is a sober active community offering free group-exercise programs to anyone with 48 hours of sobriety. This study explores the associations between social connections experienced within The Phoenix and length of recovery (in months) among Phoenix members.

Methods: A social network analysis was conducted on 26 members of The Phoenix CrossFit in Denver, Colorado who were in recovery from SUDs (Mage=39 years±6.9; 65% men). Participants completed an online survey measuring demographics, substance use/recovery, participation in The Phoenix, and social connections with fellow Phoenix members. A Linear Network Autocorrelation Model assessed whether age, gender, duration and frequency of Phoenix participation, psychological distress, weekly physical activity, and the extent to which people with similar lengths of recovery were connected (i.e., network effects) were related to more months in recovery.

Results: Participants reported an average of 6.3 months in recovery (SD=4.7). Age ( $b=.17$ ,  $p<.01$ ), duration of Phoenix membership ( $b=1.57$ ,  $p<.01$ ), and betweenness centrality (the likelihood someone served as a bridge between otherwise disconnected members of the network;  $b=.10$ ,  $p=.03$ ) were positively related to months in recovery. Phoenix members new to recovery were more likely to connect with those who had been in recovery longer ( $b=-.12$ ,  $p<.01$ ).

Conclusion: Being part of The Phoenix may support continuing recovery for people with SUDs. People in recovery longer seem to play important roles within the larger network and bridge otherwise disconnected members. Environments like The Phoenix that foster supportive social connections, especially between new and seasoned people in recovery, could help bridge the SUD treatment gap.

### **Use of Automated Machine Learning to Detect Undiagnosed Diabetes in U.S. Adults**

Ji, Mengmeng; An, Ruopeng

Background: Early diagnosis of diabetes is essential for early interventions to slow the progression of dysglycemia and its comorbidities. This study aims to investigate the potential use of automated machine learning (AutoML) models and self-reported data in detecting undiagnosed diabetes among U.S. adults.

Methods: Individual-level data, including biochemical tests for diabetes, demographic characteristics, family history of diabetes, anthropometric measures, dietary intakes, health behaviors, and chronic conditions were retrieved from the National Health and Nutrition Examination Survey, 1999-2020. Undiagnosed diabetes was defined as having no prior self-reported diagnosis but meeting diagnostic criteria for elevated hemoglobin A1c, fasting plasma glucose, or 2-h plasma glucose. The H2O AutoML framework was used to automate the machine learning workflow. Model

performance was evaluated using the area under the receiver operating characteristic curve (AUC) and accuracy.

Results: The study included 11,815 participants, comprising 2,256 patients with undiagnosed diabetes and 9,559 without diabetes. The average ages were 59.76 years for those with undiagnosed diabetes and 46.78 years for those without. The trained AutoML model achieved an AUC of 0.909 and an accuracy of 86.5% in the test set. The model demonstrated a sensitivity of 70.26%, specificity of 90.46%, positive predictive value of 64.10%, and negative predictive value of 92.61% for identifying undiagnosed diabetes from non-diabetics.

Conclusions: This study is the first to utilize the AutoML model for detecting undiagnosed diabetes in U.S. adults. The model's high accuracy and applicability to the broader U.S. population make it a promising tool for large-scale diabetes screening efforts.

### **The Effectiveness of Critical Communication in Promoting COVID-19 Vaccination Among Youth of Color**

Mi Zhou; Dean Schillinger

Purpose: COVID-19 vaccination rates among people of color in California, particularly youth and young adults, were lower compared to other groups. This study aimed to compare the efficacy of two communication strategies—traditional public health messaging and critical communication, which fosters social justice and equity by addressing the sociopolitical forces affecting marginalized groups—in influencing attitudes and intentions towards COVID-19 vaccination and boosters. Methods: Three tests were conducted with participants aged 18-35 in California: 600 African American participants, 600 English-speaking Latinx participants, and 600 Spanish-speaking Latinx participants. Participants were randomly assigned to view videos from either a traditional public health campaign or a critical communication campaign. Pre- and post-intervention surveys assessed attitudes, vaccine

intentions, engagement with the video content, message credibility, willingness to share, and psychological reactance. ANOVA was used to compare direct reactions to the videos, while repeated measures ANOVA analyzed changes over time (pre- and post-intervention) between the two campaigns. Results: Both groups showed significant improvements in attitudes, subjective norms, vaccine intentions, and booster intentions after the intervention. The critical communication group also demonstrated significant improvements in self-efficacy ( $p=0.031$ ), reported greater identification with the message ( $p<0.001$ ), higher engagement ( $p<0.001$ ), increased credibility ( $p<0.001$ ), and greater perceived effectiveness of the message ( $p<0.001$ ). Additionally, positive emotions were significantly higher in the critical communication group ( $p=0.034$ ), indicating that this messaging was more emotionally engaging and motivating for participants. Conclusions: Critical communication approaches have the potential to create more substantial impacts on vaccine-related attitudes and behaviors among young adults in African American and Latinx communities, offering an alternative, innovative strategy for public health messaging in these populations. This highlights the strong impact of critical theory-focused messaging in engaging these groups and influencing their attitudes and intentions towards COVID-19 vaccination and boosters, and other public health measures.

**A mixed methods exploration of the barriers and facilitators of using harm reduction vending machines for people who use drugs in Nevada**

Kirk, Mia, R.; Johnson, Jessica, A.; Wagner, Karla, D.

Purpose: Harm reduction vending machines (HRVMs) are similar to a soda vending machine but are stocked with supplies to reduce fatal overdose, prevent disease transmission, and make drug use safer. The purpose of this study is to explore the

barriers and facilitators of this innovative method of service delivery in Nevada with the goal of developing best practices that promote positive behavior change.

Methods: This was an exploratory mixed methods study consisting of a survey and qualitative interviews. Recruited through incentivized snowball sampling, 213 participants from Nevada completed a cross-sectional survey. Bivariate analyses were performed. Through convenience and snowball sampling 43 participants were recruited for one-time semi-structured qualitative interviews. Thematic analysis was performed on transcripts.

Results: Study respondents had a mean age of 42, were half male, and 73% white. Two-thirds were homeless. The most common drugs used were methamphetamine and fentanyl, and 65% reported injection drug use. Under a third had heard of or used a HRVM. In the survey, most people reported no barriers to accessing HRVMs. For those who experienced barriers, lack of transportation or knowledge of the machines were paramount. The location of the machines and potential for surveillance were also concerns. Lessons for implementing agencies will be discussed, including optimal location, operating hours, and access considerations.

Conclusions: These study findings echo other research: People who use drugs find HRVMs acceptable, especially when supplies are free, and locations are convenient. Through addressing barriers and facilitators, best practices can be developed to optimize the implementation of HRVMs, promote positive behavior change, and enhance harm reduction efforts across Nevada. These findings underscore the importance of continued research and collaboration to refine service delivery models that align with the unique needs of people who use drugs.

### **The relationship between familial incarceration and unhealthy eating patterns among a diverse adolescent population**

Rojas, Mikaela, M; Becerra, Lizbeth; Zhang, Xiao; Kao, Rasmey; Collins, Stephanie; Rogers, Kim; Forster, Myriam

Background: Healthy eating patterns are essential for adolescent development. Unhealthy eating patterns (UEP) (skipping meals, using laxatives, vomiting) compromise mental and physical health, school performance, and intellectual development. Although the stress associated with family trauma can undermine healthy eating behaviors this has not been studied in the context of familial incarceration (FI). To address this research gap, we assessed the impact of FI on UEP and explored potential sex and ethnic differences in this relationship.

Methods: Data are baseline survey responses (N=1,973) of diverse high school students enrolled in a school-based study investigating risk and protective factors for developmental health outcomes. Logistic regression models tested the hypothesized relationship between FI and UEP and explored sex and ethnic differences, adjusting for covariates.

Results: On average, the sample was 16 years old (SD=1.8); 52% were female, 31% identified as Non-Hispanic White, 31% as Black, 22% as Hispanic, 9% as Multiethnic, and 7% as Asian/Pacific Islander. Approximately 13% of the sample reported having a parent/caregiver + another family member incarcerated, 12% reported having noncustodial family members incarcerated, and 10% reported having a parent/caregiver only incarcerated. One in five students (20%) reported UEP. Compared to students with no history of FI, students with incarcerated noncustodial relatives (i.e., sibling, grandparents) had nearly twice the odds of UEP (AOR: 1.7, 95% CI:1.1, 2.7), students with a parent/caregiver only incarcerated had almost three times the odds of UEP (AOR: 2.7, 95%CI:1.7, 4.4), and students who

reported parent/caregiver + other family members incarcerated had over three times the odds of UEP (AOR: 3.2, 95%CI:2.1, 5.0). No differences were found across sex or ethnicity.

Conclusion: Our findings highlight that adolescents with any type of FI have higher odds of UEP than their peers. This research can inform the development of trauma-informed, healthy-eating programs tailored for this youth population.

### **Service Provider Perceptions of Opioid Use Service in Midlands, South Carolina**

Shafiq, Tanveer Khan Ibne; Mohammad Pritom, Gazi Sakir

Purpose: This study aimed to explore the availability, accessibility, and utility of services for opioid users, as well as the perceptions of service providers regarding these services in Columbia, SC. Method: This study utilized a qualitative grounded theory approach, focusing on the experiences and perceptions of healthcare providers involved in OUD treatment. We purposively selected key informants from various sectors, including healthcare, academia, and nonprofit organizations, for in-depth interviews. The extensive expertise of key informants in OUD treatment was important to assess the accessibility and utility of these services, and understand the challenges and barriers faced by both providers and users in the context of OUD treatment. Findings: The findings revealed a multifaceted landscape of OUD treatment services in the Midlands region, characterized by a range of available treatment options, including Medication-Assisted Treatment (MAT) programs. Despite the availability of these services, several structural and individual-level barriers (included but limited to socio-structural issues such as poverty, housing insecurity, and food insecurity, as well as personal factors like motivation and stigma associated with OUD and its treatment) impede their effective utilization. The study also highlighted a significant gap in services

offered by private providers due to regulatory constraints, underscoring the need for policy interventions. Providers also emphasized the importance of comprehensive care models that go beyond pharmacotherapy to include support for social determinants of health and the need for more resources and funding to expand treatment. Conclusion: This study contributes valuable insights into the current state of OUD treatment services in Midlands South Carolina, shedding light on the challenges and opportunities for enhancing the quality and accessibility of care for opioid users. The findings underscore the importance of adopting a multi-faceted approach to OUD treatment, one that addresses the underlying socio-structural barriers and promotes the expansion of holistic and integrated treatment programs.

### **Pilot Testing of “Grow Together” an Interactive Curriculum for Immigrant and Refugee Youth**

Young, Michael; Alvarado, Rachel; Pineiro, Valerie; Gonzalez, Maria

**Purpose.** The Office of Family Assistance funds organizations to provide relationship education for youth, to help them prepare for life (READY4Life). The U.S. Committee for Refugees and Immigrants (USCRI) is one such organization. The purpose of this study was to pilot a new USCRI interactive curriculum, Grow Together, with immigrant and refugee youth. We measured changes in four outcome measures 1) Communication skills; 2) Conflict resolution/conflict management skills; 3) Healthy marriage and relationship skills, and 4) Attitudes toward finances. **Methods.** Refugee and immigrant youth enrolled in the study. Participants received an interactive 12-hour relationship education (RE) program developed for immigrant and refugee populations. The program was designed to help young people develop important life skills and become successful in their new country. In addition to the RE program, participants also received case management services. All participants completed self-report questionnaires prior to

the beginning of the Grow Together program. After the completion of this pretest questionnaire participants received the 12-hour curriculum. At the end of the program participants completed a posttest questionnaire. Results. When pretest scores were compared with posttest scores (441 matched) there were statistically significant improvements for: Communication skills ( $p < 0.0001$ ,  $d = .48$ ), and Attitudes toward finances ( $p = 0.034$ ,  $d = .51$ ). Female participants scored higher than males on conflict resolution skills ( $p = 0.019$ ,  $d = .61$ ). Older participants (those over 18), scored higher than younger participants on Conflict resolution skills ( $p = 0.035$ ,  $d = .62$ ), Healthy marriage and relationship skills ( $p = 0.021$ ,  $d = 1.43$ ), and Attitude toward finances ( $p = 0.001$ ,  $d = 0.59$ ). **Conclusions.** The study design was a pretest-posttest, with no follow-up, and no control. Nevertheless, the positive findings for this initial pilot test of Grow Together with immigrant and refugee youth, are encouraging and set the stage for a more rigorous evaluation of the curriculum. Future researchers may also examine the effects of the curriculum on health behavior and related health outcome

### **Females disproportionately burdened by sexual harassment and assault at live music events in the US**

Price, Anna E; Driscoll, A

Sexual misconduct (SM), which includes sexual harassment and assault, is a significant public health issue. **Purpose & Methods:** An online questionnaire with US adults who attend live music events was used to examine: 1) the prevalence of SM and 2) SM reporting at live music events. Respondents ( $n = 1,019$ ) were recruited through GrooveSafe and Relix Media's websites and social media. IRB approval and informed consent were obtained. Data were analyzed in SPSS using descriptive and inferential statistics. **Results:** Most respondents were women (51%), 30-49 years old (66.3%), and attended live music events often/very often (67.4%). Over half of

respondents (61%) have experienced SM at a live music event. SM occurred across all venue types (26.8% festivals, 33.1% large arenas, 33.6% midsize theatre, 30.2% small club/theatre). A greater proportion of women (80.8%) than men (45.9%) experienced sexual harassment ( $p < .001$ ). A significantly greater proportion of women also experienced sexual assault with 85% being touched/grabbed, 18.3% having clothing pulled off/down, and 7.7% forced to engage in sexual activity compared to 66.5%, 6.7%, and 1.0% of men, respectively ( $p < .001$ ). Most (87.6%) did not report their incident to the music venue. Common reporting barriers included: believing nothing would be done (24.7%), addressing it themselves (17.4%), unsure who to report the incident to (16.0%), not wanting to disrupt others' musical experience (12.7%), and no signage for where to get help (11.5%). A larger proportion of women (14.4%) than men (7.9%) did not report SM because they were in an altered state due to alcohol/drugs ( $p = .028$ ). Conclusions: These findings indicate that SM is prevalent at live music events and that women are disproportionately burdened. Interventions to raise awareness of SM, reduce SM, and support SM reporting at live music events are warranted. Future research should examine music venues' policies and procedures for SM prevention, training, and response.

### **Hispanic Breastfeeding Rates in a Nurse Home Visiting Program: The Influence of Mental Health, Breastfeeding Confidence, and Acculturation**

Gilliland, Paige, D; Simmons, Leigh Ann

Hispanic individuals in the United States have higher rates of breastfeeding initiation and duration than any other racial/ethnic group and are more likely to use supplemental feeding referred to as "las dos cosas." Additionally, Hispanic individuals who are more acculturated to the United States are less likely to breastfeed when compared to Hispanic individuals who are less acculturated. The purpose of this study

was to examine the relationship between anxiety, depression, breastfeeding confidence, and acculturation on breastfeeding likelihood for Hispanic and non-Hispanic parents participating in the Welcome Baby: Road to Resilience (Welcome Baby) nurse home visiting program. The data for this secondary analysis were collected between March 2022 and March 2023 from Welcome Baby. Each participant was offered an initial in-person home visit ( $N = 252$ ) 2-14 days postpartum and a three-month follow up visit either in person or via telephone ( $N = 193$ ). Listwise deletion was used to eliminate any missing data, leaving a final dataset of  $N = 158$ . In total, four multinomial logistic regression models were used to test the relationship between ethnicity, breastfeeding confidence, maternal mental health, acculturation, and breastfeeding likelihood. Over half of the sample identified as Hispanic ( $N = 90$ ) and the other half identified as non-Hispanic ( $N = 68$ ). Most participants were exclusively breastfeeding at the initial visit (65%) and less than half were exclusively breastfeeding at the follow-up visit (49%). Maternal anxiety and breastfeeding confidence were associated with increased breastfeeding at the time of the follow-up home visit for both the Hispanic and non-Hispanic participants. Those who identified as Hispanic were less likely to breastfeed exclusively compared to non-Hispanic participants. Increased breastfeeding confidence from the nurse home visits had a greater impact on breastfeeding behavior for Hispanic participants compared to non-Hispanic participants. Acculturation (i.e., language preference) did not have a significant impact on breastfeeding in this sample of Hispanic women. Identifying as Hispanic strengthened the relationship between breastfeeding confidence and breastfeeding behaviors. These findings contribute to the growing literature on Hispanic resilience, health behaviors, and health outcomes. Results improve understanding of breastfeeding in the Hispanic community that may be used to implement new strategies to improve breastfeeding rates overall.

### **Adherence to Physical Activity Guidelines Associated with Self-Care Management and Self-Regulatory Efficacy for Type 2 Diabetes among Black/African American Men**

Park, Jeong-Hui; Prochnow, Tyler; Patterson, Meg, S; Smith, Matthew, Lee; Sherman, Ledric, D

**Purpose:** This study aims to explore self-care management and self-regulatory efficacy among Black/African American men with type 2 diabetes (T2D) who meet the World Health Organization-recommended physical activity (PA) guidelines and those who do not.

**Methods:** Data were analyzed from 1,225 Black/African American men with T2D who were surveyed via Qualtrics. Self-care practices and self-regulatory efficacy were assessed across two groups: PA guidelines adherence (450+ Metabolic Equivalent of Task (MET)-minutes/week) and non-adherence (<450 MET-minutes/week). A binary logistic regression was used to explore the relationships between meeting PA guidelines and self-care practices and self-regulatory efficacy, adjusting for potential confounding variables. Then, two-way ANOVA (PA adherence or not x age) identified age factors associated with meeting PA guidelines while controlling for self-care management and self-regulatory for T2D.

**Results:** Among Black/African American men with T2D, those not meeting PA guidelines had lower self-care management (OR=0.697,  $p<.001$ ) and self-regulatory efficacy (OR=0.984,  $p=.001$ ). Younger and older men adhering to PA guidelines reported more self-care days (younger:  $4.33\pm 1.27$ ; older:  $4.42\pm 1.30$ ) compared to non-adherent men (younger:  $3.61\pm 1.35$ ; older:  $3.28\pm 1.58$ ;  $p<.001$ ). PA-adherent men also had better self-regulatory efficacy (younger:  $58.20\pm 14.91$ ; older:  $59.88\pm 15.20$ ) than non-adherent men (younger:  $51.12\pm 16.04$ ; older:  $49.25\pm 17.16$ ) ( $p<.001$ ).

**Conclusion:** Findings indicate self-care management and self-regulatory efficacy are

key factors in PA adherence among Black/African American men with T2D. Interventions targeting these aspects could effectively promote PA, potentially leading to better T2D management and fewer adverse diabetes consequences among this population.

### **HPV Vaccination in Privately Insured Populations Before and During the COVID-19 Pandemic by Age, Sex, and Urbanicity**

Vu, Milkie; Li, Jingjing

**Introduction:** We aim to assess HPV vaccination rate among privately insured populations before and during the COVID-19 pandemic in the United States and stratify the assessments by demographic and geographic characteristics.

**Methods:** Using the Merative™ MarketScan® Commercial Claims and Encounters Database, we estimated monthly and yearly HPV vaccination rates among people aged 9–26 from 2019 to 2022, measured as the proportion of the enrolled population who received  $\geq 1$  dose of HPV vaccine during that month or year, and their relative percent change from 2020 to 2022, compared to the same period in 2019, overall and stratified by age group, gender, and urbanicity.

**Results:** The HPV vaccination rates in 2020, 2021, and 2022 were lower than 2019 and continued to decline for all age groups. The relative percent change in rate in 2022 relative to 2019 is -6.0% among children, -38.3% among adolescents, and -42.5% among young adults. The patterns are similar across subgroups, with certain disparities in magnitude. By subpopulations the highest percent declines in 2022 relative to 2019 in each age group were observed among children in rural areas (-13.5%), male adolescents (-39.8%), and young adults in rural areas (-46.0%).

**Conclusion:** During the COVID-19 pandemic HPV vaccine administration dropped substantially and had not exceeded the pre-pandemic levels by the end of 2022, with

larger declines seen among male adolescents and young adults in rural areas. Our results highlight the need of continuing monitoring and targeted intervention strategies to improve HPV vaccine administration.

### **Factors Associated with Professional Psychological Help Seeking Attitudes among Patients with Chronic Pain in Health Care Clinics in Suburban Georgia**

Lee, Guijin; Heckman, Bernadette, D.; Velcime, Miriam; Rodriguez, Madison, L.; Twaddell, Samantha, L

**Background/Purpose** Problematic mental health symptoms, including anxiety, are prevalent health concerns; yet many individuals choose not to seek help (Heinig et al., 2021). While demographic and psychological factors related to professional help-seeking attitudes are well-studied, there has been limited investigation into the relationship between these attitudes and the perceived risk of substance use. To address this gap, the current study examines attitudes toward professional counseling seeking, along with potential correlates including demographic factors, physical health conditions, perceived risk of tobacco use, and problematic mental health symptoms.

**Methods** Patients with chronic pain aged 18 years and older living in suburban Georgia (N=80) were recruited via Qualtrics (April 2021-June 2022). Participants self-reported their age, gender, race/ethnicity, relationship status, and education. Surveys assessed self-reported anxiety, depressive symptoms, physical health, interruptions of normal social activities due to health conditions, perceived risk of tobacco use, and professional psychological help-seeking attitudes. Simple linear regression was conducted in SPSS to identify factors associated with these attitudes among patients with chronic pain.

**Results** 61.3% of patients (n=49) reported that they would seek psychological help if they were worried or upset. Simple linear regression analysis indicated that those with

anxiety symptoms ( $\beta=1.593$ ,  $p<.028$ ), those who self-rated their physical health as poorer ( $\beta=-0.015$ ,  $p<.034$ ), and those with a riskier perception of tobacco use ( $\beta=1.368$ ,  $p<.008$ ) were more likely to seek professional psychological help in the future.

**Conclusions/Implications** More than half of patients with chronic pain expressed a desire to obtain professional psychological help. Anxiety symptoms, poorer physical health, and a riskier perception of tobacco use are key factors influencing help-seeking attitudes. Routine healthcare engagement may help enhance attitudes toward seeking professional help. Practitioners should provide consistent standardized psychoeducation for the patients who may be suffering from substance use problems to increase their attitudes toward seeking professional help.

### **Evaluating the association between rural-dwelling individuals and adherence to cervical cancer screening prevention guidelines.**

Krenek-Schneider, Brittany, N; Balasundaram, Rohit, B; Akpan, Idara, N; Thompson, Erika, L; Lunningham, Justin, M; Knell, Gregory

**Background:** Seventy-two percent of women with a cervix (women) aged 21–65 years adhered to the United States Preventative Services Task Force recommendations for cervical cancer screening (CCS) in 2021. Research indicates residing in a rural area (rurality) and associated sociodemographic factors influence the incidence of cervical cancer; however, few studies have assessed their effect on CCS. Therefore, this study aimed to examine associations between CCS adherence with rurality and related demographic characteristics.

**Methods:** Cross-sectional data from the 2017-2019 National Survey of Family Growth were used to evaluate CCS adherence among women aged 21-49 years (n=4579). Survey-weighted multivariable logistic regressions estimated odds of adherence by residence type (suburban and rural versus

urban), adjusting for race/ethnicity, educational attainment, insurance, and age (21-29 vs. 30-49 years). Models were further stratified by age and race/ethnicity to assess potential effect modification.

Results: Overall, 78.9% of participants adhered to CCS guidelines with differences by residence type (urban: 77.7%; suburban: 76.0%; rural: 71.5%). After adjustment, rural residents had 0.74 (95% CI: 0.55-1.01) lower odds of adherence compared to urban residents. Those with single-service plans or no insurance had lower odds of adherence (OR = 0.73, CI [0.57-0.94]), compared to those with private insurance, as did women aged 30-49 (OR = 0.75, 95% CI [0.61-0.93]) relative to those aged 21-29. Race/ethnicity and age did not modify associations between CCS adherence and rurality.

Conclusion: Results suggest rurality is potentially a barrier to CCS uptake. Future research should explore factors unique to rurality, such as access to care and cultural beliefs, as potential modifiers to CCS uptake. The effects of rural residents' lower screening rates on later-stage disease identification and disease severity should also be explored. Understanding the effect of rurality on the utilization of preventative services is crucial in developing tailored interventions, programs, and policies.

### **Understanding Public Housing Residents' Perspectives on the Smoke-Free Public Housing Policy: A Qualitative Study**

Jones, Katie, M; Moore, Kristen, E; Gehlert, Sarah; O'Neal, Miasha; Jones, Otelia; Plunk, Andrew; England, Kelli; Sheehan, Brynn

Purpose: Smoking rates are substantially higher among public housing (PH) residents than the general population, which increases exposure to secondhand smoke (SHS) among an already vulnerable and under-resourced community. In efforts to reduce these risks, HUD implemented a Smoke-Free Housing (SFH) policy in 2017, prohibiting the use of tobacco products

inside PH units and within 25 feet of buildings. Despite the policy's benevolent intent, our community work has yielded concerning feedback about the policy and its effects, including worsened air quality one-year after its implementation (i.e., indoor PM<sub>2.5</sub>). Thus, we conducted focus group interviews with PH residents to understand their perspectives of the SFH policy and its implementation. Methods: Thirty-three focus groups were conducted with 271 PH residents across 6 cities of Hampton Roads, Virginia from May 2022 to April 2023. Participants were at least 18 years old and lived in one of the PH units. Focus groups were 60-90 minutes, audio-recorded and transcribed, and led by trained moderators. Transcripts were coded and themes identified. Results: Interrater reliability was excellent, with four themes identified: safety concerns, lack of consistency and transparency, health harms, and fairness. To residents, the SFH policy was seen as unclear and poorly communicated. Although enforcement was threatened, the policy was largely unenforced across all PH buildings and locations, likely contributing to reduced perceived legitimacy of the policy and the housing authority. The need to smoke off-site was viewed as unsafe and unfeasible for residents with limited mobility. Conclusions: Based on our findings, we recommend targeted staff training to ensure all policy-related communication is consistent and accurate. Additionally, PHAs should consider offering smoking cessation programs to promote intent to quit smoking. By addressing these implementation challenges, we can more effectively translate this policy into meaningful health outcomes, advancing the goal of reducing health disparities among vulnerable populations.

### **Gender and Ethnic Differences in the Association between Alcohol Use and Teen Dating Violence**

Gomez, Rasmey; Rojas, Mikaela; Collins, Stephanie; Rogers, Kimberly; Benjamin, Stephanie; Forster, Myriam

**Background:** Teen dating violence (TDV), verbal, physical, and sexual, can increase risk for mental health issues and risky relationship patterns in adulthood. However, despite the strong association between alcohol use and TDV, research exploring gender and ethnic differences in this relationship remains limited. This study examined the association between alcohol use and TDV (e.g., victim only, perpetration only, and bidirectional) and explored gender and ethnic differences in these associations. **Methods:** Data were baseline survey responses from diverse high school students (N=1,973) participating in a school-based study investigating developmental health outcomes. Multinomial regression models tested the association between alcohol use and TDV types and assessed gender and ethnic differences, adjusting for age, state, and resource security.

**Results:** Approximately half (52%) of the sample was female and about one-third identified as White (31%), followed by Black (31%), Hispanic (22%), Multiracial (9%), and Asian/AI/AN (7%). Over 1 in 5 youth (21%) reported alcohol use, 8% experienced TDV victimization only, <1% were perpetrators, and 10% were involved in bidirectional TDV. Compared to students who do not use alcohol, students who did had over three times the risk of being a victim (RRR: 3.11, 95% CI: [1.79, 5.40]) and over two times the risk of being a victim-perpetrator (RRR: 2.98, 95% CI: [1.80, 4.92]), adjusting for covariates. Across TDV groups, Black and Hispanic youth were at greater risk of being victims compared to other ethnic groups ( $p = 0.01$ ) although there were no significant sex differences in the alcohol use and TDV association.

**Conclusion:** Our findings indicate that alcohol use during adolescence can double

and triple the risk for TDV involvement, especially among minority students. Developing culturally tailored prevention materials that address the role of alcohol in TDV is essential to reduce disparities in the prevalence of TDV and its long-term consequences.

### **Mapping the Link: Prenatal Nicotine Exposure and ADHD – A Review of Current Evidence**

Leffingwell, Quinn; Appleseth, Hannah; Doherty, Emily; Crockett-Barbera, Erica, K; Moyers, Susette, A; Croff, Julie, M

**Introduction:** The purpose of this study was to contextualize the relationship between prenatal nicotine exposure (PNE) and attention deficit hyperactivity disorder (ADHD), with a focus on identifying proposed neurobiological mechanisms of the relationship through a critical literature review. PNE may not only affect the developing fetus but potentially has long-term consequences for subsequent generations through epigenetic modifications and learned behaviors. **Methods:** Inclusion criteria: 1) Studies investigated tobacco/nicotine exposure during the prenatal period, 2) explored neurological hypotheses explaining the relationship between PNE and ADHD, and 3) measured ADHD-related outcomes. A librarian-assisted comprehensive search yielded 1,052 articles, which were independently reviewed by two blinded reviewers. Title screening narrowed the selection to 304 articles, 95 underwent full-text review, and 57 studies were included in the analysis. We evaluated nicotine exposure methods (including dosage, timing, and administration method), neurological evidence, ADHD symptom assessments, inclusion of confounding variables, adherence to reporting guidelines, and the appropriateness of study design. **Results:** Of the 57 studies, 50.9% were human research, 48.2% involved rodents, and 1.8% studied fish. Most human studies relied on caregiver-reported PNE, while most rodent studies

induced PNE orally through nicotine in drinking water. Studies focused on genetic factors (30%), brain structures (26%), and neurotransmitter systems (25%). Only 2% investigated molecular and cellular mechanisms. Methodological variations in rodent studies, such as nicotine dosage and timing of exposure, hindered clear conclusions about neural mechanisms. Human studies, which rely heavily on retrospective self-reports, often overlook interactions between genetics and environment (i.e., implications of secondhand smoke and parental ADHD). Conclusion: This mapping review identifies significant gaps in current research on PNE and ADHD. We recommend incorporating prospective designs with biospecimen analyses of maternal nicotine exposure and genetic analyses to address these limitations. Methodological improvements are necessary to advance understanding of the mechanisms contributing to ADHD risk.

### **Artificial Intelligence in Higher Education: A Comprehensive Approach**

Khan, Raihan; Zaman, Sojib; Jehi, Tony; Zeman, Catherine

Background: Generative artificial intelligence (AI) has become a common name in higher education in a very short time. Both students and faculty members are trying to understand its use in their academic life and career.

Objective: To identify how students and faculty members perceive the implications of AI in higher education.

Methods: Two separate surveys were conducted for students (N=566) and faculty members (N=176). Ten (10) interviews with faculty members and four focus group sessions (N=27) with students were conducted.

Results: Approximately 75% (423) heard about AI, 28.8% (163) said they use AI for academic purposes, and 70.8% (401) said AI could be used in a meaningful way for academic activity/improving skillsets. 75.6% (428) said their teachers used some policies

on AI in course syllabus, and 58.1% (329) had moderate to high concern about students using AI for unfair advantage in courses. Those who were not using AI for assignments and thought teachers should implement AI-related policies had 1.698 and .27 times higher concerns that AI could be used unfairly in academic assignments, respectively. 75% (132) faculty members heard about AI. Those who thought of implementing AI policies in their courses had .89 times higher concern of students using AI for unfair means. Qualitative analysis revealed that faculty members were concerned about the ethical use of AI in education. Some students were also concerned about the same, but a lot of them also informed they thought AI could improve their skill set and help them learn. Some predict AI will replace many jobs, including those of teachers and health care providers. Overall, our analysis suggests faculty members are more concerned than students about unfair use of AI in higher education.

Conclusions: Faculty members and students suggested adopting policies to reduce unfair use of AI in academics and identifying meaningful ways to utilize AI for education and research.

### **Gender and Ethnic Difference in the Association between Bias-Based Bullying and Substance and Polysubstance Use among Diverse High School Students**

Gomez, Rasmey; Rojas, Mikaela; Silva, Natasha De; Becerra, Lizbeth; Forster, Myriam

Background: Adolescent substance use (e.g., alcohol, nicotine, cannabis) and particularly polysubstance use, using more than two substances concurrently, increase risk for addiction in adulthood are public health priorities. Bias-based bullying (BBB), being bullied because of one's race, religion, gender, or disability can undermine healthy development and increase risk for maladaptive coping behaviors such as substance use. Research has linked

traditional bullying involvement to substance use, however the relationship between BBB and adolescents' substance use is understudied. To fill this gap, we investigated gender and ethnic differences in the association between BBB and adolescent substance use patterns among a diverse sample of high school students.

**Methods:** Data are survey responses from students (N=1,973) enrolled in a school-based study investigating developmental and health outcomes. GLMs assessed the association between BBB and alcohol, nicotine, and cannabis use and polysubstance use and whether these associations varied across gender and ethnicity, adjusting for age, state, and resource insecurity.

**Results:** Approximately half (52%) of the sample was female, and one-third identified as White (31%,) followed by Black (31%), Hispanic (22%), Multiracial (9%), and Asian/AI/AN (7%). Nearly one-third (29%) of adolescents reported polysubstance use, 22% alcohol use, 16% nicotine use, 16% cannabis use, and over one in three (34%) reported past 30-day BBB. Youth who experienced BBB had significantly higher odds of nicotine (AOR: 1.51, 95% CI:1.05, 2.18) and polysubstance use (AOR: 1.38, 95% CI:1.01, 1.88) than their peers. Asian/AI/AN and male students who experienced BBB had significantly higher odds of polysubstance use than other ethnic groups or female students (ps = 0.03).

**Conclusion:** BBB can increase the risk of substance use but especially polysubstance use and may be most harmful for minority students and males. Campus communities should consider school- and individual-level interventions that address BBB, as well as support services for vulnerable populations.

### **Relationship between Cannabis Use and Physical Activity in the United States based on Legalization and Health Status**

Merrill, Ray, M; Ashton-Hwang, Kendyll; Gallegos, Liliana

**Purpose:** Studies investigating the association between cannabis use and physical activity have had mixed results. This study provided a population-based assessment while determining how the relationship is affected by variables such as cannabis legalization status and chronic medical conditions. **Methods:** Behavior Risk Factor Surveillance System (BRFSS) data were used to evaluate the association between cannabis use and physical activity among adults ages 18 years and older in several states and territories of the U.S. during 2016-2022. Adjusted odds ratios (ORs) measuring the relationship between physical activity in the past 30 days (yes vs. no) and cannabis use in the past 30 days (yes vs. no) based on legalization and health status were estimated using logistic regression. **Results:** Physical activity increased from 73.16% in 2016 to 75.72% in 2022 (3.5% increase) and current cannabis use increased from 7.48% in 2016 to 14.71% in 2022 (96.7% increase). Current cannabis use was 6.5% higher in areas of legalized recreational cannabis (vs. not legal) and 0.7% higher in areas of legalized medical cannabis (vs. not legal). For the combined years, the OR measuring the association between cannabis use and physical activity was 1.24 (95% CI 1.10-1.41), after adjusting for age, sex, race/ethnicity, marital status, employment status, education, smoking status, weight classification, legal status, and chronic medical condition. The adjusted OR was 1.47 (95% CI 1.34-1.62) in areas with legalized recreational and medical cannabis (vs. illegal) and 1.05 (95% CI 0.98-1.12) in areas with legalized medical cannabis only (vs. illegal). Having a medical condition was significantly associated with lower prevalence of physical activity in the adjusted models (overall adjusted OR = 0.79, 95% CI 0.73-0.85). However, this significantly lower

odds ratio was insignificant for current cannabis users. Conclusions: Public policy and personal health behaviors may improve with the findings that legal medical cannabis promotes greater physical activity in those experiencing chronic medical conditions and legal recreational cannabis promotes (even more so) greater physical activity in those not experiencing chronic medical conditions.

### **Bridging the Gap: Social Media's Role in Disseminating Evidence-Based Information to Women of Color with PCOS**

Wasata, Ruhun; Guerra-Reyes, Lucia; Valdez, Danny; Herbenick, Debby; Lester, Jessica; Nina; Azziz, Ricardo; Promei, Noor-E-Afroz

**Purpose:** Polycystic Ovary Syndrome (PCOS) is a complex, chronic, multifactorial disorder affecting up to 12% of women globally, with Women of Color (WOC) bearing a disproportionate burden. WOCs experience challenges in accessing culturally competent, evidence-based, scientific medical information about PCOS management and care. Social media has the potential to advance PCOS education with culturally competent, evidence-based information for WOC with PCOS. This research aims to understand how social media can be leveraged to disseminate scientific, evidence-based information to WOC with PCOS, ensuring equitable access to reliable health resources. **Methods:** We conducted a content analysis of 1,450 Instagram PCOS posts, spanning ten months (March-December 2023), published by nine major PCOS content creators. Analysis used a customized Qualtrics Data Analysis Matrix, producing descriptive statistics of key variables and qualitative themes. **Results:** Findings reveal a robust volume of Instagram posts on various aspects of PCOS, including lifestyle modification, food and dietary changes for weight loss, and strategies for controlling hormonal imbalances. However, we observed a significant absence of targeted

messages for WOC regarding culturally congruent food and food habits. Content creators did not appear to tailor their posts to any specific racial and ethnic minority groups, who are disproportionately affected by various physical and mental health aspects of PCOS. Content is centered around white-centric standards, with expensive programs, foods, and supplements that are inaccessible for people with lower socioeconomic status and WOC with PCOS. **Conclusion:** This study underscores the gaps in current social media messaging about PCOS, which often fails to cater to the unique challenges faced by WOC with PCOS. By considering cultural differences and socioeconomic barriers, content creators can better support WOC in managing PCOS. These findings offer a pathway to improving the quality of PCOS information shared on social media platforms, fostering more equitable and effective care for WOC.

### **Use of Retrieval-Augmented Large Language Model for COVID-19 Fact-Checking**

Li, Hai; Huang, Jingyi; Yang, Yuyi; An, Ruopeng

**Background:** The COVID-19 pandemic has been accompanied by an “infodemic,” where the rapid spread of misinformation has exacerbated public health challenges. Traditional fact-checking methods, though effective, are time-consuming and resource-intensive, limiting their ability to combat misinformation at scale. Large language models (LLMs) like GPT-4 offer a more scalable solution, but their susceptibility to generating hallucinations—plausible yet incorrect information—compromises their reliability. **Objective:** This study aims to enhance the accuracy and reliability of COVID-19 fact-checking by integrating a retrieval-augmented generation (RAG) system with LLMs, specifically addressing the limitations of hallucination and context inaccuracy inherent in standalone LLMs. **Methods:** We constructed a context dataset

comprising approximately 130,000 peer-reviewed articles related to COVID-19 from PubMed and Scopus. This dataset was integrated with GPT-4 to develop multiple RAG-enhanced models: the Naive RAG, LOTR-RAG, CRAG (Corrective RAG), and SRAG (Self-RAG). The RAG systems were designed to retrieve relevant external information, which was then embedded and indexed in a vector store for similarity searches. Two datasets, one real-world and one synthesized, each containing 500 claims, were used to evaluate the performance of these models. Each model's accuracy, F1 score, precision, and sensitivity were compared to assess their effectiveness in reducing hallucinations and improving fact-checking accuracy. Results: The baseline GPT-4 model achieved an accuracy of 0.856 on the real-world dataset. The Naive RAG model improved this to 0.946, while the LOTR-RAG model further increased accuracy to 0.951. The CRAG and SRAG models outperformed all others, achieving accuracies of 0.972 and 0.973, respectively. The baseline GPT-4 model reached an accuracy of 0.960 on the synthesized dataset. The Naive RAG model increased this to 0.972, and the LOTR-RAG, CRAG, and SRAG models achieved an accuracy of 0.978. Conclusions: The integration of RAG systems with LLMs offers a robust approach to enhancing the accuracy and contextual relevance of automated fact-checking, making it a valuable tool in combating misinformation during public health crises. Policy implications include the need for guidelines and frameworks supporting AI-driven fact-checking systems while maintaining transparency, accuracy, and public trust. Future research should focus on refining these models, exploring their applicability across various domains, and ensuring ethical deployment.

### **Use of Deep Neural Networks to Predict Obesity With Short Audio Recordings: Development and Usability Study**

Jingyi Huang; Peiqi Guo; Sheng Zhang; Mengmeng Ji; Ruopeng An

**Background:** The escalating global prevalence of obesity has necessitated the exploration of novel diagnostic approaches. Recent scientific inquiries have indicated potential alterations in voice characteristics associated with obesity, suggesting the feasibility of using voice as a noninvasive biomarker for obesity detection.

**Objective:** This study aims to use deep neural networks to predict obesity status through the analysis of short audio recordings, investigating the relationship between vocal characteristics and obesity.

**Methods:** A pilot study was conducted with 696 participants, using self-reported BMI to classify individuals into obesity and nonobesity groups. Audio recordings of participants reading a short script were transformed into spectrograms and analyzed using an adapted YOLOv8 model (Ultralytics). The model performance was evaluated using accuracy, recall, precision, and F1-scores.

**Results:** The adapted YOLOv8 model demonstrated a global accuracy of 0.70 and a macro F1-score of 0.65. It was more effective in identifying nonobesity (F1-score of 0.77) than obesity (F1-score of 0.53). This moderate level of accuracy highlights the potential and challenges in using vocal biomarkers for obesity detection.

**Conclusions:** While the study shows promise in the field of voice-based medical diagnostics for obesity, it faces limitations such as reliance on self-reported BMI data and a small, homogenous sample size. These factors, coupled with variability in recording quality, necessitate further research with more robust methodologies and diverse samples to enhance the validity of this novel approach. The findings lay a foundational step for future investigations in using voice as a noninvasive biomarker for obesity detection.

**Exploring the Scalability and Potential for Implementation of IDEAS for Hope, a Telehealth-Delivered Counseling Intervention for Suicide Prevention Among People Living with HIV in Kilimanjaro, Tanzania.**

Ngangula, Paul; Joel, Louise; Rwakilomba, Jackline; Parker, Ryan, A; Madundo, Kim; Amiri, Ismail; Knettel, Brandon, A

**Background** Despite the life-saving potential of mental health interventions, their scalability and integration within healthcare systems present significant challenges, particularly in low-resource global settings. In this study, we investigated the potential to scale and integrate IDEAS for Hope, a brief telehealth counseling intervention designed to reduce suicidality and improve HIV care engagement among people living with HIV (PLWH) in Kilimanjaro, Tanzania. By examining the complex interplay of barriers and facilitators, our objective was to conduct qualitative interviews focused on identifying actionable strategies for successful national implementation. **Methods** We used purposive sampling to recruit participants from key stakeholder groups, including healthcare administrators, network and internet providers, representatives from the Ministry of Health, and community organizations. We conducted semi-structured in-depth interviews using a guide informed by the Consolidated Framework for Implementation Research (CFIR). Interviews were audio-recorded, and transcripts were coded in a team-based approach to identify barriers and facilitators to implementation of the IDEAS for Hope intervention. The CFIR – Expert Recommendations for Implementing Change (ERIC) mapping approach will be used to interpret the data and to identify targeted implementation strategies. **Results** Despite strong institutional support and emerging policy guidelines aimed at integrating mental health with HIV care, significant barriers persist. These include a shortage of trained mental health professionals, limited technological access in rural areas, the criminalization of

suicide, and deeply entrenched stigma. Stakeholders recommended training peer counselors, enacting urgent policy reforms to decriminalize suicide, introducing mental health programs or concentrations in universities and colleges, addressing stigma, and developing inclusive technological platforms to enhance the reach and effectiveness of the intervention. **Conclusion** The IDEAS for Hope intervention is both feasible and effective in reducing suicidality and improving HIV care engagement among PLWH in Tanzania. Our research reveals that the successful implementation of mental health interventions in Tanzania requires addressing systemic, legal, cultural, and infrastructural barriers. By identifying and addressing these key challenges, the research provides a practical roadmap for implementing similar interventions in other low-resource settings

**“You can’t feel connected with your community if you’re not in it:” An exploration of the reciprocal relationship between physical activity and sense of place**

Hoeper, S; Granner, M, L; Clark, J; Devereux, P; Kelley, S; Wagner, K; Yang, W

**Purpose:** To explore the relationship between physical activity (PA) and neighborhood sense of place (SOP) (specifically place meaning, dependence, satisfaction, and place social bonding). **Methods:** Stratified (race/ethnicity-income) sample of residents who had lived for 5 years or longer within four neighborhood census tracts completed an in-depth qualitative interview. Participants discussed their neighborhood built and social environment, how these environments impacted their SOP and PA, and the relationship between SOP and PA. Interviews were recorded, transcribed verbatim, and analyzed in NVivo using Thematic Analysis. **Results:** Participants (n=35) had diverse perspectives regarding neighborhood SOP and PA. Four main themes were identified that reflected a reciprocal relationship between SOP and

PA. Three themes described the influence of SOP on PA: “Physical neighborhood spaces provided opportunities for PA (dependence),” “Evaluations of neighborhood space quality (satisfaction) influenced decisions for PA,” “Social experiences or perceptions (place social bonding) supported or hindered PA through comfort, safety, and belonging.” Physical neighborhood spaces (destinations, sidewalks, bike paths) provided opportunities for PA, and the quality of these spaces (safe, clean, aesthetically appealing) influenced decisions to be active. Experiences and perceptions of the social environment (crowds, safety, comfort, belonging) further impacted PA. The fourth theme described how PA influenced SOP: “PA provides opportunities for neighborhood experiences.” Being physically active in the neighborhood created opportunities to interact with neighbors or strangers, to engage with nature, or visit nearby businesses which affected SOP. Repeated positive experiences over time while being physically active in the neighborhood reinforced comfort, familiarity, belonging, memories, and meaning within the neighborhood (satisfaction, social bonding, meaning). Conclusions: PA provided opportunities to develop or strengthen SOP, and conversely, a positive SOP supported decisions to be physically active in the neighborhood. Therefore, neighborhood SOP may be an important factor for PA and should be considered in both research and urban planning.

**The perceived impact of changes to neighborhood built and social environments on residents’ agency and neighborhood physical activity.**

Hoeper, S; Granner, M, L; Clark, J; Devereux, P; Kelley, S; Wagner, K; Yang, W

Purpose: Explore how changes to the built environment (BE) to increase walkability and economic development (e.g., extended/widened sidewalks, bus lane, center median, greenery, transit station)

impacted individual agency and neighborhood physical activity (PA). Methods: A stratified (race/ethnicity-income) sample of residents (n = 35) who had lived for > 5 years within four census tracts prior to construction completed an in-depth interview. Participants discussed their neighborhood built and social environments and how changes impacted decisions regarding PA. Interviews were recorded, transcribed verbatim, and analyzed (NVivo; Thematic Analysis). Results: Three main themes were identified: “Created opportunities, eased, or hindered PA,” “Impacted how, when, or where they chose to get out in the neighborhood;” and “Individual factors influenced PA decisions and environmental evaluations for PA.” Changes to the BE (and related changes to the social environment) facilitated PA through perceptions regarding increased accessibility, enjoyment, safety, or desired destinations. Conversely, changes negatively influenced decisions for neighborhood PA due to crowds and new/continued safety issues. The BE changes did not fully address traffic and safety on the main road (e.g., not enough crosswalks and cars were now closer to pedestrians/bicyclists) and shifted traffic and increased speeding on surrounding neighborhood streets. Some participants discussed the loss of desired destinations and reduced sense of belonging which reduced their desire to get out in their neighborhood. Decisions for PA, how to engage in PA (routes, mode, time), and evaluations of the environment were influenced by individual factors like values, perceptions, (dis)ability, and desire for PA. Conclusions: The BE changes were perceived to have both positive and negative impacts on decisions about how, when, where, or if participants engaged in PA in their neighborhood. More research is needed to examine the connection between BE and decisions to engage in PA to better understand how to support behavior.

### **Resident perspectives on the impact of neighborhood built environment changes on the social environment and sense of place**

Hoeper, S; Granner, M, L; Clark, J; Devereux, P; Kelley, S; Wagner, K; Yang, W

**Purpose:** Explore how built environment (BE) changes aimed at increasing walkability and economic development (e.g., extended/widened sidewalks, bus lane, center median, greenery, transit station) impacted perceptions of the social environment (SE) and sense of place (SOP). **Methods:** A stratified (race/ethnicity-income) sample of residents who had lived for 5 years or longer within four neighborhood census tracts prior to construction completed an in-depth interview (average 60 minutes). Participants discussed the meaning and connection they had for their neighborhood, and how changes to the neighborhood BE impacted their SE and SOP. Interviews were recorded, transcribed verbatim, and analyzed in NVivo using Thematic Analysis. **Results:** Participants' (n=35) perspectives regarding BE changes included both positive and negative effects on SE and SOP. Three main themes were identified: "Changes to BE impacted perceived feel or quality of an area," "Changing BE had implications for SE," and "Changes to SE impacted the feeling, meaning, or connection to the neighborhood." The changes to the BE elevated the perceived quality of the area as "a place to be," made it more aesthetically pleasing, and offered new or different quality destinations which drew more or different types of people. More people and traffic in the area were discussed by some participants as positively (and for others negatively) affecting their perceived safety and/or their ability to conveniently navigate the neighborhood. SE changes (which were linked to BE changes and concurrent perceived changes to the larger neighborhood) negatively impacted SOP for some participants due to perceived loss of special places/uniqueness and community in the neighborhood. **Conclusions:** Although

most participants discussed how BE changes positively or minimally affected their SE and SOP, some participants discussed how BE changes had a substantially negative impact. Environmental interventions may not be uniformly positive, therefore attention to potential negative unintended consequences is warranted.

### **Social Determinants of Mental Health Treatment Access and Utilization among Reproductive-aged Women in the US**

Tasnim, Samia; Myint, Wah Wah; Ping, Ma; McKyer, E. Lisako, Jones

**Purpose:** Reproductive-aged women in the U.S. face a heightened risk of mental disorders and encounter significant barriers to access and utilize mental healthcare services and treatment. Yet, factors influencing mental health treatment access and utilization in reproductive aged women are understudied. This study aims to examine the impact of Social Determinants of Health (SoDH) on mental health treatment utilization among the reproductive-aged women.

**Methods:** The reproductive-aged women (18-44 years) with any mental illness (N=23,772) from 2015-2019 National Survey on Drug Use and Health were included for this study. Weighted descriptive, bivariate, and multivariate logistic regression analysis were conducted to examine the impacts of SDoH (e.g., age, race/ethnicity, education, employment status, marital status, income, residence, insurance) on mental healthcare access and utilization with other covariates (e.g., pregnancy status, overall health status) adjusted.

**Results:** Less than half (45.8%) of reproductive-aged women (n=10,934) with diagnosed mental illness reported received inpatient (3.4%), outpatient (28.8%), or prescription treatment (37.8%). The SDoH factors, including younger age, racial and ethnic minority status, lower educational attainment, and lack of health insurance were negatively associated with mental health treatment utilization (all Ps < 0.001).

Contrarily, participants living in rural areas (aOR=1.11, 95% CI: 1.01-1.22), individuals who are not currently married (aOR = 1.45, 95%CI: 1.22-1.73 ),lacking full-time employment (aOR = 1.4, 95%CI:1.25-1.58 ), or reporting poor overall health status (aOR=1.6, 95%CI: 1.39-1.76 ) were more likely to seek mental healthcare. .

Conclusion: Findings demonstrate that young racial and ethnic minority women are at higher risk of underutilizing mental healthcare. The SDoH significantly impact help-seeking behaviors and mental health treatment utilization among reproductive-aged women with mental disorders. These results highlight the need to develop targeted intervention programs and strengthen health systems to address SDoH, ensuring equitable access to mental health services for reproductive-aged women.

### **Global expert insights into the development of dementia-friendly communities: Bridging the Implementation Gap**

Towne, Samuel, DC; Zhu, Xuemei; Lu, Zhipeng; Lee, Sungmin; Chen, Xi; Lee, Chanam; Ory, Marcia, G.

Introduction. Dissemination and implementation of scientific findings surrounding dementia-friendly communities is critical given the extensive global burden of Alzheimer's Disease and related dementias. As such, we aimed to examine expert opinion related to facilitators of the implementation of dementia-friendly communities.

Methods. We conducted online surveys (Round 1: 2020-21; Round 2: 2023) of experts (n=53, round 1) in Aging Services; Built Environments; and Health Care, from multiple locations across the globe (North America, Europe, Asia, Australia, and Africa).

Results. After listing potential facilitators that already exist or that could be implemented for those with dementia that could help in safely navigating the community, participants were asked to list factors that could help

implementation; a selection of which (focused on multi-sector engagement and policy facilitators) are provided here. For example, in terms of bridging gaps across sectors and industries, the engagement of multiple sectors was indicated as a needed facilitator with suggestions to help implementation of this facilitator with, among other things, the clear identification of different municipal agencies necessary to carry out activities tailored to improving community navigation for those with dementia as well as a need to identify specific actions they might be responsible for. Furthermore, coordination of state Medicaid policies and procedures, partnerships with area agencies on aging, and coordination of knowledge about availability and access to community organizations was cited. In terms of policy serving as a major mechanism of facilitating one's safe navigation of the community, increased insurance coverage of dementia care within the regular scope of Medicare was cited, along with the inclusion of high-level buy-in from political leaders, increased government subsidies for the care for older adults, and the awareness of housing programs for those with dementia.

Conclusions. Multi-sector engagement of industries and the public sector are critical to make progress in developing dementia-friendly communities.

### **A Qualitative Exploration of Stress Experiences, Triggers, and Management Techniques Among International Women of Color at a US College**

Sanyaolu, Olutosin; Reeves-Doyle, Brandy

Stress is a persistent experience among college students, significantly impacting their health and academic performance. Moreover, individuals with international backgrounds, particularly women of color, may experience heightened stress resulting from language disparities and acculturative factors, thereby widening the gap compared to domestic students. This research assessed the stressors impacting health and

coping mechanisms among international women of color in college.

**Methods:** Twenty international women of color participated in in-depth interviews. Coders used open coding to discover themes in interviews. The MAXQDA 2020 Program was used to develop a dictionary of codes. Then, coders determined a list of themes and representative quotes exemplifying key points in participant responses.

**Results:** Some stressors identified were worries about the future, finances, academic performance, VISA status, physical appearance, homesickness, and safety issues. These were significant challenges that the participants were facing. For some participants, this concerned their academic success, where stressors were believed to interfere with their potential to perform well in their studies and, thus, later in employment. Moreover, intensified feelings associated with problems related to finance emerged with increased tuition fees and alarming exchange rates. Despite the adversities, participants employed various strategies to cope with stress, which included social support, physical activities, and mindfulness exercises.

**Conclusions:** The study findings provide further evidence of the need for individualized interventions to support international women of color in stress management and well-being. They show that, despite substantive stressors, resilience and motivation are critical to these women's academic success. The competence of resilience factors contributing to academic success among this population should also be researched further to anchor better support services and interventions in higher education settings.

### **AI vs. Human Coding: A Comparison of Qualitative Analysis in NIH Grant Abstracts**

Alkhatib, Sarah, A; Jiwa, Nadiya; Judd, Dallin; Luningham, Justin, M; Sawyer-Morris, Ginie; Ulukaya, Merve; Molfenter, Todd; Taxman, Faye, S; Walters, Scott, T;

**Objective:** Artificial intelligence (AI) methods such as Large Language Models (LLMs) are gaining attention as tools for qualitative data analysis. This study compares the effectiveness, advantages, and disadvantages of ChatGPT4.0, compared to human coders, in coding innovation characteristics of NIH grant abstracts.

**Methods:** We analyzed 118 NIH grant abstracts using ChatGPT and human coders. In a first step, the main "innovation" of the grant (e.g., the idea or practice being tested) was judged by both ChatGPT and human coders. In a second step, the quality of the outputs were rated by both ChatGPT and human coders for depth/detail (DD) and relevance/completeness (RC), on 5-pt Likert scales. Identical instructions were given to ChatGPT and human coders at both steps.

**Results:** GPT-generated innovation outputs were consistently rated higher on both depth/detail (DD) and relevance/completeness (RC), regardless of whether humans or ChatGPT performed the scoring ( $F(1, 176) = 133.9, P < 0.001$ ). On average, human evaluators gave GPT outputs a rating of 4.47 on both DD and RC, compared to 3.33 (DD) and 3.24 (RC) for human-generated outputs. This suggests that GPT-produced outputs were viewed as more detailed and relevant than human outputs. On average, humans tended to assign higher ratings compared to ChatGPT.

**Conclusions:** ChatGPT 4.0 shows potential in qualitative analysis of grant abstracts, particularly in generating detailed responses. ChatGPT output was rated higher in depth/detail and relevance/completeness by both humans and ChatGPT itself, compared to human outputs. When used with carefully designed prompts and instructions, LLMs can augment and even enhance traditional

qualitative coding approaches, leading to more efficient, detailed, and consistent results. These findings highlight the potential to incorporate LLMs in research evaluation processes, possibly enhancing the efficiency and depth of qualitative data analysis.

### **Expert consensus on indicators of social determinants of health: A modified Delphi study**

Maness, Sarah, B; Griner, Stacey; Thompson, Erika, L

**Purpose:** There is a lack of consensus of what is considered a Social Determinants of Health (SDH) among researchers. This study aimed to gain expert consensus on SDH indicators for inclusion in a framework-based SDH instrument for population-level public health surveillance.

**Methods:** We used a modified Delphi method to gain consensus on salient SDH indicators. We recruited participants via email from a PubMed search of researchers who had published on SDH in 2023-2024. To be eligible for the study, participants have self-identified as an SDH researcher. Participants completed three rounds of surveys. Fourteen participants completed all three surveys (Survey 1, n=32; Survey 2, n=15; Survey 3, n=14). We presented participants with the Healthy People SDH framework and asked them to rank the importance of the indicator (5-point scale, not at all important to very important), provide comments, and suggest removing or adding new indicators. Following rounds one and two, researchers compiled results and shared a summary with participants. Participants had the opportunity to revise their responses and rate the importance of each indicator.

**Results:** Participants agreed to add indicators of Income (n=14), Transportation (n=14), Access to Quality Education (n=13), Experiences of Racism and Discrimination (n=12), Type of Healthcare Coverage (n=11), Adverse Childhood Events (n=9), Access to Higher Education (n=8), Costs of Care (n=8), and Provider Cultural and Linguistic Competency (n=8). Most

participants recommended removal of Civic Participation (n=9) and Social Cohesion (n=8).

**Conclusions:** Results of our study indicate that SDH researchers agreed on significant modifications to an existing SDH framework. Future research can include a qualitative interview component to understand participants' rationale for responses more fully. Our ultimate goal is to develop an SDH instrument for use in population-level public health surveillance based on the consensus of SDH indicators from our study

### **Evaluating the long-term effects of Parental Loss on Young Adult's Health Outcomes**

Lewis, Sarah E.; Blake, Jamilia; Gilreath, Tamika; Croan, Veronika

**Study Purpose:** Losing a parent can be a life-altering occurrence, but childhood parental death historically has not been considered an adverse childhood experience (Boullier, 2018). As such, the physical health outcomes and health behaviors in emerging adults following the death of a parent in childhood are underexplored (van Heijningen, 2024). We aim to examine the association between experiencing parental death in childhood with physical health outcomes and health behaviors in early adulthood.

**Methods:** This study will draw from the Future of Families and Child Wellbeing Study, a longitudinal birth cohort study that follows a large diverse sample of families through young adulthood (N= 4,898) (Reichman et al., 2001). Data from the focal children and their caregivers at ages 15 and 22 will be the focus of analyses. History of parental death assessed at or before age 15 (N= 272) and physical health (e.g., self-reported health care utilization, physical limitations, overall ratings of health) and substance (e.g., self-reported alcohol and marijuana use) and tobacco use at age 22 will be targeted study variables for analyses. The focal child's history of adverse childhood experiences, demographic variables, and a

self-reported measure of parental-child relationship closeness will also be targeted study variables.

Results :Controlling for sex, poverty level, history of adverse childhood experiences, and perceived parental closeness, we will use multiple regression to examine the association between parental death and self-reported health rating and adolescent substance and tobacco use. Logistic regression will be used to assess the association between parental death and healthcare utilization and physical limitation. Conclusion: The results of this study will have implications for understanding the physical health outcomes and health behaviors in emerging adulthood following the death of a parent, further developing knowledge of how young adults are affected by an earlier parental loss.

**Association between social media and adolescent health behaviors using the ecological momentary assessment (EMA) strategy: A systematic review**

Mealing, Saylor; Dong, Andrea; Dou, Jeffery; Wang, Kevin; Yang, Kelly; John, Sneha; Harber, Taylor; Nguyen, Angela; Chiang, Shawn; Ma, Ping;

Purpose: The utilization of recent methodological and technological advancements, such as mobile-device-assisted ecological momentary assessment (EMA), has enhanced the assessment of social media use (SMU)'s impact on adolescent health behaviors (HB). However, less is known about characterizing the use of EMA in examining social media's influence on adolescent HB. Therefore, this systematic review aimed to examine the existing literature on the relationship between SMU and health-risk behaviors among adolescents using an EMA approach.

Methods: We searched five academic databases (e.g., PubMed, PsycINFO) for peer-reviewed, English articles with quantitative methodology published between January 2017 and July 2024. Articles utilizing the EMA approach to

examine the impact of SMU on adolescent HB (e.g., substance use, diet, physical activity, etc.) were included. The quality of the study was assessed using the Checklist for Reporting EMA Studies.

Results: Ten studies (N=1,433 adolescents) met inclusion criteria, with half conducted in the U.S. (N=5). Participants' ages ranged from 11 to 18 years. Across all studies, mobile phones were used to deliver EMA prompts, with the majority using text or email (N=6). EMA duration varied from 4 to 42 days, with 1 to 9 prompts daily. Only two studies included a follow-up component, both of which were brief. Of the ten studies reviewed, four (40%) reported that increased screen time and SMU negatively impacted sleep duration, while one (10%) suggested that lower physical activity time combined with higher levels of SMU had a negative impact.

Conclusion: This review demonstrates that EMA approach is feasible for use in social media research among adolescents; it has the potential to reduce participants' recall bias and increase ecological validity. Furthermore, the results provide the foundational insights into examining the relationship between SMU and adolescent health in an EMA setting.

**Association of stress level with heavy drinking and smoking by sex and COVID-19 infection: A cross-sectional analysis of a nationally representative US adult survey**

Cho, Beomyoung (Luke); Pan, Yining; Stallings-Smith, Sericea

Purpose: Individuals who have experienced COVID-19 infection may be more prone to psychological distress and substance use than those without COVID-19 infection history. In addition, sex-specific patterns have been observed in COVID-19 infection-related outcomes. The purpose of this study was to examine the association of stress level with heavy alcohol use and heavy cigarette smoking depending on sex and COVID-19 infection history.

**Methods:** From the 2022 Behavioral Risk Factor Surveillance System, we conducted multiple logistic regression analyses ( $n = 172,110$ ) to examine the associations between stress level (never, rarely/sometimes, or usually/always) and heavy drinking ( $>14$  drinks/week for males or 7 drinks/week for females) and heavy smoking (smoked  $\geq 100$  cigarettes in lifetime and currently smoke  $>20$  cigarettes/day on average), adjusting for covariates. Regression models were stratified by sex (84,355 males and 87,755 females) and COVID-19 infection status (ever had a positive test result or not).

**Results:** A significant positive association between stress level and heavy drinking was observed among female adults only when they had experienced COVID-19 infection (AOR = 1.90, 95% CI = 1.26, 2.86), while the odds of heavy drinking did not vary by stress levels among male adults, regardless of COVID-19 infection history. For heavy smoking, a significant positive association was observed only among female adults with COVID-19 infection history (AOR = 2.60, 95% CI = 1.42, 4.78), whereas the positive association between stress level and heavy smoking existed in male adults regardless of COVID-19 infection history.

**Conclusions:** Individuals with higher stress levels were more likely to partake in heavy drinking and heavy smoking compared to their counterparts, and the COVID-19 infection experience influenced this substance use among female adults. Follow-up care for post-COVID-19 infection should include ways to reduce psychological distress that could lead to substance use or exacerbate existing substance abuse behaviors, particularly among female adults.

### **Associations between adverse childhood experiences and adolescent cannabis and nicotine product use: moderation by ethnicity**

Shanazari, Eric; Unger, Jennifer, B; Shahverdi, Abnous; Becerra, Lizbeth; Luna, Gabriel; Kao, Rasmey; Rojas, Mikaela; Forster, Myriam

**Background:** Nicotine and cannabis use during adolescence can impair healthy development and increase the risk of adverse health outcomes in adulthood. Adverse childhood experiences (ACE), correlated traumatic stressors experienced before age 18, negatively impact mental health and are highly correlated with youth substance use. However, ethnic variation in the association between ACE and substance use is understudied.

**Methods:** Data are baseline survey responses ( $N=1,973$ ) from adolescent students enrolled in a longitudinal study investigating social and environmental risk and protective factors for health and school outcomes. Regression models tested the hypothesized association between ACE and adolescents' nicotine and cannabis product use. We explored ethnicity as a moderator of this association, adjusting for demographic covariates.

**Results:** The sample was 53% female, 34% non-Hispanic White, 31% Black/African American, 22% Hispanic, 9% Multiethnic, and 7% Asian. Approximately 15% of respondents reported lifetime nicotine product use, 16% reported lifetime cannabis product use, and 55% experienced at least one ACE. Regression results suggest that every additional ACE was associated with higher odds of nicotine (AOR: 1.58, 95%CI: 1.36-1.83) and cannabis (AOR: 1.38, 95%CI: 1.18-1.93) product use. Significant ethnic differences were found in the relationship between ACE and nicotine ( $p=0.024$ ) but not cannabis use; In comparison to Asian youth, ACE were especially risky for nicotine use among Non-Hispanic White (AOR: 1.85, 95%CI: 1.45-2.36), Black/African American

(AOR: 1.36, 95%CI: 1.04-1.79), and Hispanic (AOR: 1.76, 95%CI: 1.21-2.56).

Conclusion: Results highlight the risk for substance use associated with early trauma and that intervention content needs to consider the evolving nicotine and cannabis product market as well as culturally tailored messaging in programming for diverse, vulnerable youth populations.

### **Exploring the prevalence of and risk and protective factors associated with behavioral addictions among alcohol and substance use disorder treatment populations**

Shanazari, Eric; Sussman, Steve; Zhang, Xiao; Becerra, Lizbeth; Unger, Jennifer, B; Galimov, Artur; Sinclair, Deborah, L; Meza, Leah; Forster, Myriam

Background: Approximately 17% of Americans have been diagnosed with a substance use disorder (SUD) and 10% with an alcohol use disorder (AUD). While research is scant, it is estimated that as many as half of the SUD/AUD treatment-seeking population has a comorbid behavioral addiction (BA). Because BAs (e.g., sex, food, gambling) can increase risk for relapse and decrease quality of life, research is needed to identify risk and protective factors for BAs among adults receiving SUD/AUD treatment. This study explored the prevalence of comorbid BAs among adults within the first 90 days of treatment, and the associations among adverse childhood experiences (ACE), recovery capital (internal/external resources necessary to initiate and sustain recovery from addiction) and BAs.

Methods: Data are online survey responses from adults (N=274) in 11 AUD/SUD treatment centers located in four states. Respondents reported past 6-month BAs, ACE, and recovery capital (BARC), using valid and reliable instruments. Regression models tested the hypothesized association between ACE, recovery capital, and BAs.

Results: The sample was 51% male, on average 36 (SD=4.13) years old, and

ethnically diverse- Non-Hispanic White (47%), Hispanic (35%), African American (10%), Multiethnic (5%), and Asian/Pacific Islander (3%). Over one fourth (28%) reported one BA while nearly half (44%) acknowledged multiple BAs. The most common BAs were exercise (27%), internet (26%) food (22%), sex (20%), and gambling (20%). Every additional ACE was associated with higher incidence rates of BAs (IRR:3.36, 95% CI:2.39,4.72) whereas higher recovery capital scores were associated with lower incidence of BAs (IRR:0.98, 95% CI: 0.97, 0.99).

Conclusion: Comorbid BAs among this SUD/AUD treatment population were common, especially among respondents with a history of ACE. Promising treatment approaches may include having providers consider the role and remediation of BAs in AUD/SUD treatment best practices, and foster building recovery capital by addressing childhood trauma.

### **Psychological Distress as a Mediator in the Relationship Between Interpersonal Factors and Substance Use in the Caribbean Context**

Malcolm, Shandey, D; Brown, Jennifer, L; Malcolm, Alicia, B; Chin, Daisylyn, M; Malcolm, Kendra, O; Smith, Kayan; Simeon, Donald

Background: Adolescents in the Caribbean report disproportionately high rates of substance use. They also report excessively high related poor health outcomes, including violence and mortality. To intervene, understanding the factors that drive substance use behaviors and the mechanism through which they operate is necessary. Since psychological distress is both influenced by interpersonal factors and predicts substance use, we considered it as a mediator in the relationship between interpersonal factors and substance use in the Caribbean context.

Methods: Our data source was the 2022 Turks and Caicos Islands (TCI) Global School Health Survey (N=1684, Mage=14.4

years, 49.8% male). We utilized structural equation modeling to test a model in which parental involvement, peer support, and bully victimization were associated with psychological distress, which, in turn, was associated with recent (30-day) substance use (alcohol, tobacco, and cannabis). We also tested the direct and indirect (through psychological distress) effects of each predictor on the use of each substance.

Results: Alcohol, tobacco, and cannabis use was reported by 29.1%, 20.3%, and 9.1% of adolescents, respectively. The data supported the hypothesized model (CFI=.95; RMSEA=.04;  $\chi^2(67) = 234.19$ ,  $p < .001$ ). Lower parental involvement and bully victimization were associated with psychological distress, which in turn was associated with a higher likelihood of alcohol, cannabis, and tobacco use. Additionally, parental involvement was directly and indirectly associated with lower cannabis and tobacco use, but it was only indirectly associated with lower alcohol use. Being bullied both directly and indirectly predicted cannabis use but only indirectly predicted tobacco and alcohol use. Finally, peer support was only directly associated with cannabis use.

Conclusions: The study supports public health interventions that promote parental involvement and prevent bully victimization as a means of reducing/preventing substance use in the TCI. It also suggests that such interventions may partially work by reducing psychological distress.

### **Prevalence and Socio-ecological Correlates of Substance use in a Small Caribbean Territory**

Malcolm, Shandey, D; Brown, Jennifer, L; Malcolm, Alicia, B; Chin, Daisylyn, M; Malcolm, Kendra, O; Smith, Kayan; Simeon, Donald

Purpose: Adolescents in the Caribbean report disproportionately high rates of substance use. However, striking variation exists across the region, making it necessary to understand adolescent substance use at

the country level. In this study, we sought to determine the prevalence and correlates of substance use in the Turks and Caicos Islands (TCI). This small Caribbean territory has experienced growing adolescent violence and mortality but has never undertaken a nationally representative survey to understand related behaviors such as substance use. Methods: We conducted the Global School Health Survey in the TCI from May through June 2022. We invited all students in all high schools to complete the confidential survey, which was administered to students in their classrooms. The student response rate was 66.5%; N=1684, Mage=14.3y, 49.8% male. We first determined the frequency of recent alcohol, tobacco, and marijuana use, defined as any use in the previous 30 days (yes/no). Informed by the socioecological model, we then considered individual (gender, age, socio-economic status, psychological distress), interpersonal (parental involvement, peer support), and institutional (school connections) factors as predictors of the use of each substance in logistic regression models.

Results: Recent alcohol, tobacco, and cannabis use was reported by 29.1%, 20.3%, and 20.3% of adolescents, respectively. Older age (OR=1.29,  $p < 0.001$ ), psychological distress (OR=1.81,  $p < 0.001$ ), and lower parental involvement (OR=0.95,  $p = 0.03$ ) were associated with alcohol use. Psychological distress (OR=2.16,  $p = 0.002$ ) and lower parental involvement (OR=0.87,  $p < 0.001$ ) were associated with tobacco use. Finally, male sex (OR=1.69,  $p = 0.005$ ), older age (OR=1.22,  $p = 0.02$ ), psychological distress (OR=2.29,  $p < 0.001$ ), and lower parental involvement (OR=0.86,  $p < 0.001$ ) were associated with cannabis use. Conclusion: With prevalences above global averages, substance use is a significant health concern among TCI adolescents. Our study suggests interventions focused on promoting parental involvement and preventing psychological distress. We plan to conduct qualitative interviews to inform intervention strategies further.

### **Vaccine Hesitancy and Uptake Barriers Among US College Students Concerning Catch-Up HPV Papillomavirus Vaccination**

Chiang, Shawn, C; Sifat, Munjireen, S; Ma, Ping

**Background:** HPV vaccination was recommended for young adult females in 2006 and males in 2011 to prevent HPV-related cancers and genital warts. However, uptake of the HPV vaccine remains below the coverage goals in the US. College students represent a priority population for catch-up vaccination due to their increased risk for HPV infection. The purpose of this study was to examine how current college students who had not already initiated the HPV vaccination view the vaccine, and if their vaccine hesitancy is associated with specific demographic or attitudinal factors.

**Methods:** In late 2022, we recruited a diverse groups of US college students ages 18-26 who used the social media platform Instagram and had not initiated the HPV vaccination series via online panel. Respondents completed a 10-minute survey measuring HPV awareness, vaccination attitude, vaccine hesitancy, barriers to vaccination, as well as background socio-demographics. Multivariable logistic regression models were used to examine subgroup differences.

**Results:** Of 552 respondents, most had heard of HPV (75%), and the HPV vaccine (63%). Only a quarter of students 144 (26%) reported high intentions to get HPV vaccinated in the next six months, while 210 (38%) felt ambivalent about it. High vaccine hesitancy was reported in 22% of students. The top reasons why students had not initiated catch-up vaccinations included concerns about the side effects (36%), lack of recommendations from doctor (34%), and lack of awareness of the HPV vaccine (24%). Hispanic participants were more likely to have concerns about effectiveness (28% vs 4%,  $p < .001$ ), while Non-Hispanic Black and other races expressed more distrust in the

vaccine compared to Non-Hispanic White participants (21%, 29% vs 9%, all  $p < .01$ ).

**Conclusions:** Efforts to increase HPV catch-up vaccinations will require a tailored approach to address hesitancy factors specific to unique demographic sub-groups.

### **Bridging the Gap Between Observation and Reality: The Crucial Role of Mixed Methods**

Shilpa Patil; RoiSan Nhpang; Dr. Malinee Neelamegam; Dr. Stacey Griner

**Purpose:** This study investigates the complex nature of acculturation stress among older Asian Indian immigrants in the U.S., emphasizing the importance of mixed methods in bridging gaps in understanding these experiences. Acculturation stress poses unique challenges that require a nuanced approach to unravel its multifaceted impact on immigrant populations. **Methods:** Utilizing a mixed-method design, this study involved surveys and in-depth interviews with 30 Asian Indian adults aged 55 and older in the Dallas-Fort Worth Metroplex. The research contrasted results from an adapted acculturation scale with qualitative themes from the interviews. This approach facilitated a comprehensive examination of acculturation stress and its correlation with factors such as length of U.S. residency, cultural identity struggles, and familial responsibilities. This framework allowed for a deeper exploration of both quantitative and qualitative aspects of acculturation experiences. **Results:** While most participants reported minimal current acculturation stress across multiple domains, such as feeling like a foreigner (36%) and facing discrimination based on appearance (32%)—interviews revealed significant social and assimilation challenges during initial immigration. These challenges centered on retaining cultural values and raising children with these values. The age of immigration significantly influences individuals' ability to assimilate and accept new cultural values. The findings underscore the complexity of acculturation experiences and highlight the

need for culturally sensitive tools to measure acculturation in South Asian populations. Conclusions: The study advocates for a longitudinal approach to understanding immigration's impact on health outcomes. Mixed-methods research offers a valuable framework for gaining deeper insights into acculturation stress and developing effective support mechanisms. This study contributes to advancing health behavior research through implementation science by bridging the gap between observation and reality.

### **Assessing Coping Strategies and Substance Use Among College Students in Southern California**

Orjiakor, Stephanie; Hamidzadeh, Olivia; Dahlman, Linn; Forster, Myriam; Silver, Steven; Avila, Giselle A.; Moreno, Brittany; Skropos, Katherine; Szostkowski, Nickolas; Rainisch, Bethany

**Background:** College students transitioning to young adulthood face unique stressors (e.g., financial, sociocultural, systemic inequities) that can lead to the adoption of maladaptive coping behaviors such as substance use. Research has demonstrated that in contrast to problem-focused coping, avoidant and emotion-focused strategies where individuals attempt to relieve emotional distress or seek distraction rather than addressing a challenge directly, can increase risk for substance use. This study investigates the association between coping strategies and substance use among a diverse sample of college students attending a southern California university.

**Methods:** Data (N=254) are baseline survey responses from participants enrolled in a substance use prevention program focusing on adaptive coping strategies. For each substance (alcohol, cannabis, and nicotine), use was reported as the number of days used in the past 30 days. Coping domains, including avoidant, problem-focused, and emotion-focused strategies were measured via the Brief COPE 28 inventory. Logistic regression models assessed the associations between coping domains and

any substance use (separately for alcohol, nicotine, and cannabis), controlling for demographics.

**Results:** The average age of the sample was 22.6 years (SD=5.96) and 66% were female. Fifty-six percent of students identified as Hispanic, 16% Asian, 14% non-Hispanic White, 10% Black, and 4% Other. Nearly half of students reported past 30-day alcohol use (48%) followed by cannabis (25%), and vaping nicotine (13%). Adjusting for all coping domains, students who relied most heavily on avoidant coping had significantly higher odds of past 30-day cannabis use (OR: 1.53,  $p=0.009$ , 95% CI [1.11, 2.10]).

**Conclusion:** Preliminary findings indicate a significant association between avoidant coping and any cannabis use among a diverse sample of college students. These findings highlight the importance of interventions fostering adaptive coping strategies to mitigate substance use risks. Future research should explore the role of coping mechanisms in substance use behaviors using larger samples.

### **Overcoming salient barriers to PrEP use among Black and Latino cisgender men who have sex with men: Provider and patient perspectives on patient-centered PrEP care**

Meanley, Steven; Listerud, Louis; Kosciow, Blake; Richards, Alana; Bauermeister, José A.; Watson, Dovie L.; Hiserodt, Emily; Rocha, Danielle; Parchment, Amelia; Arnold, Emily; Bouris, Alida

**Purpose:** Despite numerous social barriers, many Black and Latino cisgender men who have sex with men (BLMSM) successfully take PrEP for HIV prevention, suggesting underlying resilience processes. Guided by resilience theory, this study aimed to highlight useful patient-centered approaches for supporting BLMSM to overcome salient PrEP barriers. **Methods:** We interviewed N=16 PrEP-persistent BLMSM and N=6 clinical staff (April-September 2024) from a Philadelphia community-based federally-qualified health center and HIV service

organization. Interviews ascertained common barriers across the PrEP care continuum and patient-centered processes for leveraging clinical and community resources to overcome these barriers. Interviews were virtual (Zoom), lasted 30-60 minutes, recorded, and transcribed. Using thematic analysis, we detailed key staff-patient interactions that helped BLMSM initiate, sustain, and re-engage in PrEP care. Results: BLMSM (ages 18-39 years; 57% Black, 31% Latino, 12% Black/Latino Mixed Race; 38% daily-oral PrEP, 62% long-acting injectable PrEP; 44% PrEP re-engaged after discontinuation) and providers (3 clinicians, 3 PrEP support staff) reported anticipated side effects, perceived costs, insurance delays, job transitions, medication stigma, and daily-pill adherence as common barriers to PrEP. BLMSM overwhelmingly identified their PrEP team and patient-centered approaches as their most valuable resource for engagement and retention. Patient-centered practices included: Creating safe spaces for nonjudgmental, culturally-congruent dialogue; Comprehensive patient education about PrEP options, especially for those challenged by daily-oral regimens; Co-located care; Linkage to financial/co-pay assistance programs; Liaising between pharmacies and insurance companies; Providing free PrEP to minimize interruptions when financially strained; and using multiple communication strategies for appointment reminders and outreach. Conclusions: We highlight practical opportunities for clinical providers to implement a comprehensive approach to patient-centered PrEP care with BLMSM. Ensuring PrEP providers have the organizational capacity to implement effective patient advocacy and outreach, culturally-congruent patient-provider communication, and financial assistance navigation will be best-equipped to support BLMSM's resiliency to overcome commonly-cited barriers to PrEP engagement.

### **Understanding disparities in pro-tobacco marketing exposure**

Moon, Tae Joon; Barroso, Cristina, S.; Garner, William, A

**PURPOSE:** We examined differences in exposure to pro-tobacco marketing messages by setting (stores, billboards, pharmacies, bars/restaurants, events, pop-ups) and media channels (radio, TV/streaming, social media, other online media, print media, mail/email) among people who identified as Non-Hispanic White (NHW), Non-Hispanic Black (NHB), and Hispanic. **METHODS:** Logistic regression models examined differences in exposure to pro-tobacco marketing in the past 30 days using data from the 2022 Health Information National Trends Survey on 5093 adults (NHWs=3203, NHB=889, Hispanic=1001). **RESULTS:** Compared to participants who were NHW, participants who were NHB were significantly more likely to be exposed to tobacco marketing messages through billboards (OR=1.542,  $p<.001$ ), radio (OR=1.472,  $p=.026$ ), TV/streaming (OR=2.296,  $p<.001$ ), social media (OR=1.924,  $p=.019$ ), and other online sources (OR=1.924,  $p<.001$ ). Participants who were Hispanic also had greater odds of exposure to tobacco marketing messages than participants who were NHW: billboards (OR=1.469,  $p<.001$ ), bars/restaurants (OR=1.887,  $p<.001$ ), events (OR=1.542,  $p<.042$ ), pop-ups (OR=2.013,  $p<.001$ ), radio (OR=1.423,  $p=.040$ ), TV/streaming (OR=2.296,  $p<.001$ ), social media (OR=1.740,  $p=.001$ ), other online media (OR=1.607,  $p=.021$ ), and print media (OR=1.435,  $p=.014$ ). **CONCLUSIONS.** People who were NHB and Hispanic were disparately exposed to pro-tobacco marketing. It is noteworthy that there were no differences in exposure to tobacco marketing in conventional point-of-sale locations (e.g., stores and pharmacies), where regulations prohibit specific forms of marketing. However, participants who were NHB and Hispanic were primarily exposed to pro-tobacco marketing messages through

conventional and new media channels compared to their counterparts who were NHW. In addition, participants who were Hispanic were also exposed to pro-tobacco marketing in various settings in their daily lives, such as bars/restaurants, events, and pop-ups. These results indicate a need for expanded regulations on pro-tobacco marketing.

### **A mid-implementation qualitative assessment of a workplace smoking cessation program tailored to the construction industry**

De Dios, Roxana; Salloum, Ramzi; LeLaurin, Jennifer H; Lee, David, J; McCollister, Kathryn; Pradhananga, Nipesh; Bursac, Zoran; Asfar, Taghrid

**Purpose:** This project aims to expand the role of the safety manager to implement a workplace smoking cessation program in the construction industry. In April 2024, we began a sequential multiple-assignment randomized trial to identify the best adaptive smoking cessation program tailored to the construction industry. To further enhance the program's implementation, we held a meeting in September 2024 with safety managers who delivered the intervention to discuss implementation challenges.

**Methods:** Ten participants attended the meeting. The meeting started with a presentation summarizing the study's progress (e.g., companies enrolled in the study, safety managers training) and challenges in implementing the program (enrollment rate, workers' adherence to treatment, safety managers and companies' leaders' commitment, tobacco quitline (TQL) role in the study). Following the presentation, the research team led a discussion to address the challenges and explore ways to overcome them. The meeting was recorded, transcribed, and thematically analyzed.

**Results:** Three implementation challenges were identified. 1) Workers' barriers to participating in the study were avoiding smoking stigma, lack of interest in quitting smoking, and stress due to time restrictions

onsite. 2) Enrollment rate in the TQL was low (25%) mainly due to scheduling conflicts. 3) Safety managers' commitment to the study was hindered by busy work schedules, unforeseen emergency procedures (e.g., injuries, safety protocols), and extreme weather conditions (e.g., extreme heat, rain). **Conclusion:** Recommendations to enhance and facilitate the program implementation were to: 1) promote the program among workers by providing non-monetary incentives (shirts with the study logo, lunch) and offering educational sessions about the risk of smoking on-site and the potential of using the TQL service, 2) shifting the study activities from breakfast to lunch break to avoid the heavy and stressful morning workflow, and 3) enrolling 2 safety managers at each site to facilitate intervention delivery and prevent workflow disruption.

### **Longitudinal Analyses of Lack of Companionship in a Major US-Mexico Border City Comparing Before and During COVID-19**

Towne, Samuel, D; Lee, Sungmin; Lee, Hanwool; Lee, Chanam; Zhong, Sinan; Ory, Marcia; Li, Wei

**Introduction.** We assessed the likelihood of reporting social ties comparing immediately prior to COVID-19 and during COVID-19 (summer 2020) given the importance to one's quality of life.

**Methods.** Surveys (n=407 among community-dwelling adults, El Paso, TX) measured lack of companionship, measured as no (i.e., not at all) versus yes (i.e., experienced several to nearly every day of a typical 2-week period). Longitudinal models accounted for repeated measurements over time (pre/during COVID-19); age (18-44, 45-64, 65+); sex; marital status; ethnicity; income; neighborhood walkability; having a car; and the interaction of walkability and time.

**Results.** Adjusted analyses of lacking companionship indicated significant variation across: time interacted with walkability (p<.0001); age (p=0.0167); and marital

status ( $p < .0001$ ). Specifically, the likelihood of lacking companionship was higher ( $p < .05$  for all comparisons) within COVID-19 (predicted probabilities ranged: 0.41-0.59), as compared to immediately prior (predicated probabilities ranged: 0.21-0.27). Those located within the most walkable areas saw the largest increase (in predicted probabilities) with a change of 0.35; followed by those in the lowest level of walkability at 0.25 and those in the middle level of walkability at 0.14. In terms of main effects not in the interaction, those married or living with a partner saw the lowest rates of lack of companionship (predicted probability: 0.20) as compared to both those divorced, widowed, or separated (predicted probability: 0.47;  $p < 0.0001$ ) or those who were never married (predicted probability: 0.42;  $p < 0.0001$ ). Further, the youngest age group saw the highest predicted probability of lack of companionship (predicted probability: 0.46) as compared to both those aged 45-64 (predicted probability: 0.36;  $p = 0.0488$ ) or those aged 65 and older (predicted probability: 0.25;  $p = 0.0048$ ).

**Conclusions.** Given inequities facing residents of differing levels of walkability, age, and marital status, we recommend multi-faceted interventions tailored to residents with coordinated efforts spanning multiple sectors (e.g., urban planning, public health).

### **Pathways to Health Disparities in Brownsville: Structural Equation Modeling of Socio-Economic Status, Healthcare Access, and Mental Health in an Underserved Hispanic Border Community**

Park, Jeong-Hui; Blackburn, Christine C; Rodriguez, Arturo; Roma, Alek; Sanchez, Vanessa; Garcia, Robert; Prochnow, Tyler

**Purpose:** The purpose of this study is to explore the pathways through which socioeconomic status (SES), barriers to healthcare utilization, and healthcare equity are associated with health outcomes such as regular medical checks, quality of life (QoL),

mental health, and loneliness in Brownsville, Texas.

**Methods:** We collected data through a Qualtrics-administered questionnaire, targeting five key domains: nutrition, physical activity, mental health, social connectivity, healthcare access, and quality of care among adults aged 18 and older residing in Brownsville, Texas. This preliminary analysis included 133 respondents. The direct paths between exogenous variables (SES, barriers to healthcare utilization, and healthcare equity) and endogenous variables (regular medical checks, quality of life, mental health, and loneliness) were analyzed by using the Structural Equation Model (SEM).

**Results:** SES positively influences regular medical checks ( $\beta = 0.417$ ,  $p = .001$ ). Healthcare equity negatively affects QoL ( $\beta = -0.101$ ,  $p = .011$ ) and positively influences mental health ( $\beta = 0.691$ ,  $p = .004$ ) and loneliness ( $\beta = 0.218$ ,  $p = .007$ ). The covariance between barriers to healthcare utilization and healthcare equity was also significant ( $Cov = 4.965$ ,  $p = .001$ ).

**Conclusion:** The results from this study emphasize the importance of socioeconomic factors and perceptions of equitable healthcare environments in the promotion of better psychological well-being. These findings underscore the need for interventions aimed at improving healthcare equity to enhance health outcomes, particularly among lower SES populations in border communities

### **Technology and Herbs Aiding Supplementation Trials: A Protocol Protocol**

Erica K. Crockett-Barbera; Susette A. Moyers; Emily Doherty; Hannah Appleseth; Quinn Leffingwell; Julie M. Croff

**Introduction:** Nearly 60% of American adults use dietary supplements for health benefits. Behavior of supplementation use may be critically important to achieve outcomes associated with supplementation use. The behavior of inconsistent use is commonly termed, "non-adherence," and may be

attributed to forgetfulness, misunderstanding, and indifference. Ashwagandha is an herbal supplement that reduces perceived stress and enhances memory in randomized controlled trials. Given the unique impacts of this herbal supplement, it may uniquely improve the health behavior of adherence, compared to other supplements. This study aims to examine factors related to the behavior of adherence for ashwagandha supplementation compared to a placebo.

**Methods:** Healthy, female 25-45 years old adults (n=100) will be recruited for this randomized, controlled trial. Consented participants will be randomly assigned to the supplement or placebo arm in a 1:1 ratio. Participants will be advised to consume 1 capsule (300mg) twice daily for 3 months of ashwagandha supplement or placebo. Capsules will be provided in smart single dose dispensers that record dose date/time. Behavioral supports during participation will be available to both supplement and the placebo group – and therefore serves as a test of whether the supplement improves memory and ability to test whether sub-populations respond differently to the behavioral supports across conditions. Behavioral supports include automated text reminders twice daily. Daily data from participants will include time-stamped surveys documenting capsule consumption. **Ethics and Registration** This study will undergo institutional IRB approval and registration with ClinicalTrials.gov prior to implementation.

**Discussion:** This study aims to leverage supplements and technology to address the behavior of supplement and perhaps medication adherence. Results will detail the impacts of supplementation on adherence. Sub-group analysis will support additional information about which groups of people best respond to behavioral supports of supplement/medication use. Information gained from this study can improve clinical trial protocols involving the health behavior of adherence.

### **Implementing Ask-Advise-Connect in Food Pantries: A Two-Arm Pragmatic RCT To Promote Use of Evidence-Based Smoking Cessation Treatment**

Trapl, Erika S; Kooman Gonzalez, SJ; Kim-Mozeleski, J

**Introduction:** People with socioeconomic disadvantage have an inequitable burden of tobacco use and tobacco-related health disparities and are currently underserved by existing smoking cessation interventions. This study examines how food pantries can serve as a community-based setting for screening, brief intervention, and referral to the tobacco quitline. The three aims of the study are: (1) co-design an adapted Ask-Advise-Connect (AAC) approach for a community-based setting; (2) implement community-adapted AAC (CA-AAC) in food pantries to examine the reach and effectiveness; and (3) identify multilevel contextual factors that impact the provision of tobacco cessation in food pantries.

**Methods:** In Aim 1, we use co-design methods with pantry stakeholders (volunteers and patrons) to fully develop the AAC protocol to be implemented in food pantries. In Aim 2, we will conduct a two-arm pragmatic cluster randomized controlled trial (RCT) across 18 pair-matched food pantries, hypothesizing that CA-AAC will have higher reach and higher impact (measured as reach x effectiveness) for quitline engagement than an information-only comparison arm. In Aim 3, to inform implementation and sustainability, we will use RE-AIM and PRISM frameworks to examine factors that impact the reach, effectiveness, implementation, and maintenance of CA-AAC in food pantries across contextual domains (multi-level perspectives, multi-level partner characteristics, external environment, and implementation and sustainability infrastructure). This study is currently under review and awaiting IRB approval.

**Discussion:** This project will be among the first to adapt AAC for relevance across a range of community-based food pantry

settings and their varying models. This project represents a critical opportunity to test and refine implementation strategies that can flexibly and sustainably improve access and uptake of cessation services to a high-need, underserved health disparity group, and provide a guide for how to do this in community-based settings.

Registration: This study will be registered with ClinicalTrials.gov.

### **Protocol for measuring empathy and compassion with artificial intelligence in peer support for mental health challenges**

Klaus, Federica; Amadi, Chioma; Sahrling, Nicole; Badal, Varsha D; Eyler, Lisa T

Introduction: Study aims are to determine the 1) feasibility and acceptability of an artificial intelligence (AI)-based assessment of empathy and compassion (EC) in a virtual, live peer support group setting, 2) relationship of subjective vs objective EC assessments to perceived support delivered by the peer group.

Methods : To design the study protocol, we conducted two focus groups with leaders (n=4) and members (n=44) of Recovery International (RI), a community organization providing peer-support for mental health challenges, and distributed a validated implementation science outcome survey (Weiner et al, 2017) to a subset of participants (n=8). We have recruited 34 participants through RI mailing lists (eligibility: adult members of RI with internet access) and are collecting data, including diagnostic interviews, standardized online surveys, and recordings of 4 weekly 1-h long virtual peer support meetings. Our predictors will be subjective, self-rated assessment of EC of the peer-support meeting via brief online surveys and objective, AI-based quantification of EC based on audio recordings of the meetings (Machine Learning using extracted audio features). We expect that EC milieu of the meeting will be influenced by how people feel before and after the meeting, together, these will form the subjective EC measures in parallel to the

objective AI-based assessment of EC during the meeting. Our outcome will be the self-reported rating of global support received due to the peer support meeting, analyzed using linear mixed models.

Ethics: This study has received university IRB-approval.

Discussion : By establishing infrastructure, leveraging AI technology and proving feasibility in a community-based live, virtual setting, this project will contribute to lowering translational science hurdles. This knowledge could also benefit other areas, such as disease prevention and community health, by integrating new technology with health behavior and public health.

### **Protocol for a randomized controlled trial to evaluate a digital sexual assertiveness intervention for adolescent sexual minority males**

Javidi, Hannah; Walsh-Buhi, Eric R.; Macapagal, Kathryn

Introduction: Adolescent sexual minority males (ASMM) are at disproportionately high risk for HIV and STIs, with condomless sexual activity being a key driver of new infections. Sexual assertiveness, which includes affirmative consent and condom negotiation skills, is a key protective factor. Our team adapted an existing digital sexual consent intervention for adolescents to enhance sexual assertiveness skills among ASMM, addressing this population's unique challenges and needs. The current study describes the upcoming evaluation of the adapted intervention (PACT: Promoting Assertive Communication among Teens).

Methods: PACT is a brief, animated, skills-based program grounded in health behavior change and persuasion theories. The program was adapted iteratively using feedback from ASMM through needs assessments, focus groups, and usability testing sessions. PACT will be evaluated in a randomized controlled trial with a sample of 300 sexually active ASMM (ages 14-17 years) in the U.S., recruited via Instagram ads and snowball sampling in Fall 2025. After

assenting and completing a baseline survey, participants will be randomly assigned to either the PACT intervention or an attention-matched control program focused on growth mindsets. Participants will complete three post-test assessments: immediately post-intervention, and at 3-month and 9-month follow-up. We will assess PACT's acceptability, its efficacy in changing cognitions and behaviors related to consent and condom negotiation, and implementation factors.

**Ethics:** This study has been approved by the Indiana University Institutional Review Board (Protocol # 20740).

**Discussion:** This research has the potential to improve attitudes toward condom use and sexual consent among ASMM while providing a comfortable and familiar format to learn sexual assertiveness skills. This may serve as one important step in closing the disparity in HIV/STI rates and sexual violence victimization between sexual minority youth and their heterosexual peers.

**Registration:** This study will be registered on [clinicaltrials.gov](https://clinicaltrials.gov) prior to the recruitment of the first participant.

### **Identifying Prevalence and the Effects of Variable Message Signs on Commercial Vehicle Drivers' Risky Behaviors using Artificial Intelligence Technology: A Protocol for Anonymously Detecting Speeding, Seatbelt Compliance and Cell Phone Use**

Moran, Ryan J.; Rogers, J. Jill; Garfein, Richard S.; Hill, Linda L.

**Introduction** In 2022, 5,936 people were killed in the United States in traffic crashes involving commercial motor vehicles (CMVs) and 70% of those people killed were occupants of other vehicles, an increase in fatalities from 2021. Safe CMV operation remains a public health concern due to the high risks associated with operating large vehicles over long distances, yet understanding the prevalence of risky behaviors remains elusive. This work aims to interface AI-equipped roadside cameras to

anonymously measure the prevalence of handheld cell phone use, speeding and seatbelt noncompliance among CMV drivers and to evaluate the effectiveness of roadside messaging to improve risky behaviors.

**Methods** Using roadside cameras equipped with AI technology, we collected quantitative, naturalistic driving data for more than 2,688 hours in 16 locations representing diverse roadway types. Publicly observable behaviors were recorded both day and night from 160,289 CMVs, coded by risk-contributing behaviors for prevalence. These risky behaviors are further evaluated by time-of-day, road type, day-of-week, and other influential factors. Ongoing work will deploy variable message systems (VMS) that interface with AI-cameras to better understand the impact(s) of targeted messages to change detected behaviors, via a second downstream AI-camera.

**Ethics** This project was reviewed and approved through the expedited IRB review process in accordance with the requirements of the Code of Federal Regulations on the Protection of Human Subjects (45 CFR 46).

**Discussion** The prevalence of risky behaviors varied by road type and time of day; the highest overall prevalence exceeded 10% of CMV drivers, with seat belt nonuse use being the highest contributing factor. In general, higher rates were found between midnight and noon. These data will inform new CMV educational courses, policy makers and law enforcement as they work to keep our roadways free of seatbelt non-compliance plus drivers who speed or use handheld cell phones.

### **A novel Peer Support Specialist intervention to promote behavior change for initiation and retention on medications for Opioid Use Disorder in underserved populations**

Howard, Kerry, A; Byrne, Kaileigh, A; Coleman, Ashley; Litwin, Alain, H; Rennert, Lior

**Introduction:** Rural, underserved communities experience care barriers for

opioid use disorder (OUD), while social isolation puts these populations at heightened risk. Innovative, evidence-based strategies are necessary to reduce barriers and influence uptake and retention to medications for OUD (MOUD). Peer support specialists (PSS) may naturally fit, providing social connectedness with a person with experience with OUD, and behavioral support and resources to promote recovery. The study aims to assess acceptability and efficacy of a novel PSS service delivery to increase MOUD initiation and retention in underserved populations.

**Methods:** Based on patient and PSS feedback, this study developed and validated a checklist describing activities for a PSS protocol designed specifically to initiate and maintain patients on MOUD. The novel protocol was acceptable and desirable to PSSs, with an average of 95.5% agreement with questions assessing these qualities. This study will next enroll 90 participants with OUD visiting mobile health clinics (MHC). Through dynamic modeling frameworks, MHCs can be strategically deployed to areas of greatest need, thereby reaching target populations. PSSs will employ the newly-validated protocol to participants for a 3-month period. We will assess MOUD initiation and retention rates compared to participants with OUD visiting the MHCs prior to the intervention.

**Ethics:** This study has received IRB approval.

**Discussion:** The study offers a key opportunity to develop and investigate the effectiveness of a novel intervention to reach underserved communities and promote behavioral change towards MOUD initiation and retention. It also serves as a demonstration of the translation of development of evidence-based interventions to delivery to a wider population, as the planned next step is a scaled-up deployment to 750 participants. Through these protocols, the study has the potential to save lives from negative OUD outcomes, while reducing health disparities by targeting rural, underserved communities.

**Registration:** This study is registered with ClinicalTrials.gov.

### **Protocol for Developing and Feasibility Testing an mHealth E-cigarette Prevention Intervention Tailored for Teens with Congenital Heart Disease**

Fox, Kristen, R; Vannatta, Kathryn, A; Jackson, Jamie, L; Heffner, Jaimee, L; Rausch, Joseph, R; Garg, Vidu; Patterson, Jeremy; Shen, Yvette; Greiner, Amelia, M; Ferketich, Amy, K

**Introduction:** Nearly one-third of teens with congenital heart disease (CHD) are likely to initiate e-cigarette use despite being acutely vulnerable to e-cigarette-related health harms. No existing evidence-based e-cigarette prevention interventions address the unique needs of teens with CHD. This ongoing research aims to: 1) develop a mobile health (mHealth) e-cigarette prevention intervention that includes stress management and CHD knowledge modules via a user-centered design process, 2) evaluate the feasibility of a randomized clinical trial (RCT) of the mHealth intervention, and 3) explore pre-to-post intervention change in indicators of e-cigarette prevention (e.g., e-cigarette knowledge, perceived positive outcomes of e-cigarette use, e-cigarette refusal self-efficacy).

**Methods:** This research is being conducted at a Midwestern academic pediatric hospital by a multidisciplinary team with expertise in psychology, public health, cardiology, and user-centered design. Aim 1 has two phases: a) formative focus groups with teens with CHD, parents/caregivers, and cardiology clinicians to identify intervention preferences to inform initial design direction and prototyping and b) a single-arm pilot trial (N=16 teens) to test the prototype and gather feedback for refinement. Following refinement, a pilot RCT (N=72 teens) will be conducted to evaluate Aims 2 and 3. Teens (N=72) will be randomly assigned to receive either the mHealth intervention or treatment-as-usual. The primary outcome is feasibility

of the RCT (e.g., recruitment rate, retention rate). Differences in pre-to-post change in indicators of e-cigarette prevention between the intervention and treatment-as-usual arms will be explored using constrained longitudinal data analysis. An intent-to-treat approach will be used for all analyses.

Ethics: Ongoing procedures have been approved by the site's IRB.

Discussion: If feasibility/acceptability is satisfactory, a fully powered efficacy trial of the intervention will be conducted. Ultimately, this program of research has the potential to mitigate cardiovascular risk among teens with CHD.

Registration: This research will be registered on ClinicalTrials.gov.

### **Testing Sustainability via Active Garden Education Wellness Implementation Strategies in Early Care and Education (SAGE WISE): Protocol for a Type 3 Hybrid Implementation-Effectiveness Design Trial**

Lee, Rebecca, E; Szeszulski, Jacob; Bruening, Meg; Hollenbeak, Christopher, S; Whisner, Corrie, M; Todd, Michael, W

Introduction: Efficient and effective implementation of garden-based learning opportunities improves child health and increases social capital for low-income serving early care and education (ECE) facilities. This protocol will compare how three implementation strategies impact measures of implementation, sustainability, cost and child health outcomes using the Multiphase Optimization Strategy (MOST) framework to test strategies in a full factorial model. • Methods: Guided by the Consolidated Implementation Science Framework for Research, we will measure site characteristics of 32 partnering ECE facilities serving low-income families, teacher (N=64) and social network characteristics, and child (N=320) health outcomes. Drawing on community based participatory research methods, we will use an implementation mapping process to collaboratively refresh and finalize

implementation strategies. ECE facilities will be pair matched by degree of current implementation and site characteristics (size, enrollment) and pairs randomly allocated to one of eight implementation strategy combinations to conduct a full factorial model (4 facilities per condition). Anticipated strategies include (1) SAGE basic (garden + online curriculum + materials box), (2) SAGE e-support implementation package (text messages + newsletters + hotline), (3) SAGE in person support and training, and (4) SAGE ECE virtual learning collaborative. Assessments will be done at the beginning and ending of the academic year with site audits, parent and teacher surveys, and noninvasive child fitness, physical activity, Veggiemeter and eating in the absence of hunger measures. Costs and cost effectiveness ratio for each of the strategies will be calculated from a payer and societal perspective to determine which implementation strategy or combination of strategies may be most scalable. • Ethics: This protocol will receive IRB approval prior to beginning the study. • Discussion: Results will help inform decisions about garden and curriculum implementation strategies that can be scaled for ECE facilities in underserved communities. • Registration: This study is awaiting registration with ClinicalTrials.gov, pending anticipated notice of grant award.

### **MATaspire: Mental health Awareness Tailored App for Substance Prevention and Integrated Resilience Education**

Dahlman, Linn; Forster, Myriam; Hamidzadeh, Olivia; Aguilar-Avila, Giselle; Moreno, Brittany; Orjiakor, Stephanie; Skropos, Katherine; Szostkowski, Nickolas; Silver, Stephen; Rainisch, Bethany

Introduction: The stressors associated with transitioning to early adulthood (e.g., finances, academics, relationships) can compromise wellbeing and increase risk for substance use. Given the steep rise in rates of mental health issues among college students, elevated risk for substance use

during this developmental period, and the evolving web-app environment, this study developed and will test a web-app focused on fostering adaptive coping skills and limiting or preventing substance use. MATAspire provides accessible, evidenced-based, and culturally relevant substance use prevention and mental health promotion material to diverse, young adult college students at a public university in southern California. Methods: Over four years, ~1,000 students age 18-30, will be randomized to either a control group or a prevention program web-app group. The web-app consists of six, weekly web-modules. Two modules educate students about three classifications of coping strategies (e.g., avoidant, problem-focused, and emotion-focused) and their application, and four provide best practices in substance misuse prevention (e.g., knowledge, perceived risks, normative re-education). Skills and knowledge are incorporated in practical examples and students engage in interactive components of the app such as quizzes, flip cards, and videos. The web-modules also provide information about available academic, behavioral, physical, social, and mental health and wellbeing campus resources. Participants will complete online baseline, exit, and 90-day follow-up surveys. Outcome measures include students' self-reported coping strategies (Brief COPE 28); anxiety and depression symptomology (GAD and CESD-10); and past 30-day alcohol, nicotine, cannabis, and illicit drug use. Ethics: This study received university IRB approval and is registered with ClinicalTrials.gov. Discussion: If this web-app is effective, MATAspire represents an innovative accessible format for the delivery of content that can enhance students' adaptive coping competencies and limit or reduce substance use. Many college communities will benefit from evaluating cost-effective prevention programming delivered in the preferred modality of young adults.

## **Examining the Health Impacts of Floor Versus Chair Sitting: A Two-Phase Study on Movement, Posture, and Well-being**

Pham, Loree, T

**Introduction** This protocol outlines a two-aim study investigating the effects of different sitting environments - specifically floor versus chair sitting - on movement, postural changes, and general well-being, with an innovative focus on sedentary behavior modifications. By directly comparing floor and chair sitting, the study aims to provide insights and potentially simple yet impactful ways to reduce the harms of sedentary behavior and prolonged sitting while promoting health.

**Methods** We will conduct a two-phase study: a controlled lab experiment, followed by a month-long free-living phase. Participants will include young adults aged 18-35 years, recruited from a university population. Aim 1 involves participants sitting in either a chair or on the floor, in random order, with each session lasting 30 minutes, during which movement and postural data will be collected via accelerometers and video observation. For Aim 2, continuing participants will be asked to sit on the floor for one hour daily. They will record their sitting habits through daily diaries and weekly check-ins for one month, followed by a final qualitative interview. Statistical analysis will compare movement patterns and postural changes between the two sitting types, employing mixed models to account for repeated measures within subjects.

**Ethics** This study has received university IRB approval.

**Discussion** This protocol offers a novel approach to exploring how different sitting environments influence health behaviors, postural dynamics, and overall movement patterns, highlighting the exploration of floor sitting within a Western context, where traditional chair sitting predominates. The two study aims will elucidate basic biomechanical impacts of floor sitting, as well as real-world feasibility and acceptability of this practice. This exploration opens

avenues for culturally-inclusive, adaptive lifestyle interventions. If effective, this approach could be broadly applied to various populations to mitigate the harms of prolonged sitting.

**Registration This study has been registered with [ClinicalTrials.gov](https://clinicaltrials.gov).  
Implementation and Dissemination of The WORTH (Women-serving Organizations Rallying for Tobacco-free Health) Program: A Funded Quality Improvement Study Protocol to Address Evidence-Based Tobacco Capacity in Women-Serving Organizations**

Britton, Maggie; Bergey, Abigail E.; Tran, Kim B.; Martinez Leal, Isabel; Chen, Tzuan A.; Blalock, Janice A.; Reitzel, Lorraine R.

**Introduction:** Women face significant tobacco-related health disparities. Although women's intentions to quit using tobacco are similar to men's, women face distinct biological (e.g., carcinogen susceptibility), psychosocial (e.g., pregnancy/motherhood stigmatization), and socioeconomic (e.g., lower income) challenges which, coupled with targeted marketing, impede cessation and long-term abstinence. As a result, women bear a disproportionate burden of tobacco-related death and disability. Together, these factors emphasize the need for targeted intervention in community and healthcare organizations with explicit missions or programs to serve women (WSOs). The WORTH Program aims to implement and disseminate a comprehensive tobacco control and intervention program in/to WSOs. **Methods:** The WORTH Program core components, informed by social cognitive theory, include a tobacco-free workplace policy, in-house tobacco education program, and tobacco use clinical services. Core components will be implemented through a hybrid (implementation-effectiveness) type II scale-out to 36 WSOs in Texas. Implementation will be facilitated by strategies that support preparation and planning, capacity building and resource provision, infrastructure

enhancement, and quality assurance and adaptation. Adaptations will be documented using the Framework for Reporting Adaptations and Modifications to Evidence-based Implementation Strategies. A mixed methods approach will guide a formative evaluation process to develop site-specific implementation strategies, and to measure implementation success through Proctor's outcomes of acceptability, adoption, penetration, fidelity, and sustainment. Statewide dissemination, rooted in the utilization-focused surveillance framework, will blend active and passive strategies. **Ethics:** Approved by the institution's Quality Improvement Assessment Board; work began 9/1/24. **Discussion:** The WORTH Program's innovation lies in its integrative approach to extend an evidence-based tobacco control and intervention program to WSOs. Implementing effective and sustainable practices that build WSOs' internal capacity to address tobacco use ultimately reduce health disparities for the women they serve. Program outcomes will enrich the implementation science literature and help bridge the research to practice gap in addressing tobacco use.

**Texas STRIDE (Strength Through Resilience in Diabetes Education) for African American Adults: Protocol for a Randomized Controlled Trial**

Steinhardt, Mary; Welsh, Ashley; Smith, Jessie; Lehrer, H. Matthew; Harrison, Louis

**Introduction:** African American (AA) adults have the highest prevalence of type 2 diabetes (T2D) compared with Hispanic and non-Hispanic Whites and experience greater complications. There is a critical need for intensive lifestyle interventions that address the distress inherent in T2D and the unique stressors faced by AAs that may worsen diabetes-related health outcomes. The impact of stress on T2D self-management and health outcomes may be attenuated by resilience: a resolve to succeed despite adversities. Texas STRIDE (Strength Through Resilience in Diabetes Education) is

a randomized trial that uses a resilience-based diabetes self-management education (RB-DSME) intervention to help participants manage the psychosocial and behavioral demands of T2D. Specific Aims include: 1) To compare T2D physical (primary outcome: HbA1c) and mental (primary outcome: depressive symptoms) health outcomes in the RB-DSME intervention group vs DSME control group at 6-, 12-, and 24-months post-study entry; and 2) To test indirect effects of RB-DSME (vs DSME) on T2D health outcomes via resilience resources (stress adaptation, positive meaning, adaptive coping, coping with discrimination, spiritual coping, self-efficacy, social support, emotional regulation), self-management behaviors (dietary intake, physical activity, glucose self-monitoring, medication adherence), and HPA axis function (cortisol). Methods: 284 participants from 27 churches were recruited through announcements and glucose screenings. Experimental and control groups received 8 weekly classes and 8 bimonthly support groups, followed by 2 every other month booster sessions. Participants are provided with individual study results at each data collection session. The study is in the final year of data collection.

Ethics: The study received university IRB approval.

Discussion: This project aligns with NIH's priority to study resilience and holds strong promise for improving T2D outcomes – a major health disparity for AAs. The study uses rigorous methods to test behavioral and biological mechanisms of RB-DSME's efficacy compared to DSME. Registration: The study is registered with ClinicalTrials.gov.

### **Protocol for Using Voice Memos Recorded via Smartphones for Qualitative Data Collection**

Patterson, Megan S; Valdez, Danny; Francis, Allison N.; Prochnow, Tyler; Heinrich, Katie M.

Introduction: Collecting primary data has become increasingly challenging, both in recruiting research participants and securing quality and complete data. Qualitative data collection can pose even greater challenges due to it being time-consuming, cognitively taxing, and potentially socially undesirable for participants. Voice memos – where participants privately record their spoken responses to qualitative prompts – allows for quick responses and creates an opportunity to innovatively and effectively collect qualitative data. This presentation describes a protocol used to collect qualitative data in the context of survey research via voice memos.

Methods: Members of The Phoenix, a non-profit sober active community, in Denver, Colorado, and Wichita, Kansas were invited to participate in a longitudinal study assessing the impact of social connections created at The Phoenix on health and recovery. After completing traditional quantitative survey items, participants (N=75, Mage=38.54 years, range=24-71, 53% male) were given instructions on how to (1) locate a voice memo application on their smartphone, (2) record themselves responding to 3 prompts, and (3) upload recordings into their online Qualtrics survey. Because we were piloting voice memo data collection, we assessed task completion rates and followed up with a subset of respondents to evaluate their experience recording and uploading voice memo data.

Ethics: Study procedures were approved by the IRB and participants provided their informed consent prior to data collection.

Discussion: 91% (n=68) of participants successfully uploaded voice memos into Qualtrics, and 4 (5.3%) emailed them to the research team. Participants reported a preference for voice memos over typing out

their responses or participating in interviews because the task was simpler and faster. Participants also said they felt more inclined to share openly using voice memos. Initial evaluation suggests voice memos are an innovative and feasible way to collect qualitative data that can align with other survey research and reduce burden on respondents.

**Preventing cervical cancer through HPV self-collection and patient navigation: Protocol for the PINPOINT Randomized Controlled Trial**

Mkuu, Rahma; Donahoo, Troy; Salloum, Ramzi; Shenkman, Elizabeth; Staras, Stephanie

**Introduction:** Cervical cancer is preventable via screening or vaccination against the human papillomavirus (HPV), the leading risk factor for cervical cancer. According to Healthy People 2030, rate of cervical cancer screening in the US is not improving; therefore, there is a need to improve HPV screening implementation strategies. Women with social vulnerability (SV) (i.e., living in poverty, deprived areas, rural areas, and with minority status (e.g., black women)) are less likely to be screened, and, when screened, are diagnosed at advanced cervical cancer stages that are harder to treat. Additionally, women with chronic conditions, obesity, and type 2 diabetes (T2D), have increased cervical cancer risk, lower screening rates, advanced-stage diagnosis, and higher mortality compared to women without those conditions. Our study aim is to develop the PINPOINT intervention - Preventing Cervical caNcer through HPV self-cOLlection and patlent NavigaTion, for women with T2D, obesity, and social vulnerability.

**Methods:** There is a critical need to adapt evidence-based strategies to address SDoH barriers to cervical cancer screening. Patient navigation addresses SV barriers to cervical cancer screening and HPV self-collection tests are preferred by under-screened women. However, HPV self-collection and

patient navigation have not been combined to improve cervical screening rates. We will use intervention mapping to develop the intervention and conduct a 6-month, cluster randomized, controlled trial comparing PINPOINT (n=40) with enhanced care (patient reminders to schedule screening) (n=40). Proctor's Framework for Implementation Outcomes will be use to evaluate the intervention.

**Ethics:** We will obtain IRB approval before begging the study.

**Discussion:** The overarching hypothesis is that the PINPOINT intervention will addresses chronic disease and SV barriers to cervical cancer screening, be acceptable, and feasible in supporting the cervical cancer screening for women with multiple vulnerabilities to cervical cancer.

**Registration:** We will register with ClinicalTrials.gov before begging the study.

**A protocol for developing tobacco-related online marketing receptivity scales: A psychometric approach**

Donaldson, Scott, I; Allem, Jon-Patrick

**Introduction:** The growth of the new information ecosystem has led tobacco companies to shift their marketing focus from offline to online channels, capitalizing on the time that young adults spend online. Research has found that recognition of such online e-cigarette marketing was associated with positive e-cigarette-related attitudes and behavioral intentions, especially among young adult never users. However, existing measures were developed and tested over 25 years ago, failing to capture how young adults interact with and experience e-cigarette-related content in the new information ecosystem. This project will address these important measurement gaps in the literature by designing and evaluating a comprehensive measurement model of online e-cigarette marketing exposure and receptivity.

**Methods:** Study 1 will utilize subject matter experts (SMEs) to content analyze and evaluate an item pool with online marketing

stimuli for scale development. In Study 2 (N=2500), exploratory and confirmatory factor analysis will be used to extrapolate dimensions of online e-cigarette marketing with a nationally representative sample of young adults. We will validate the scale to examine whether it possesses acceptable psychometric properties and exhibits convergent, discriminant, incremental, and concurrent validity with known e-cigarette marketing scales and positive e-cigarette-related attitudes and behaviors. Study 3 will examine the prospective associations between the online e-cigarette marketing scale and positive e-cigarette-related attitudes and behaviors at a 1-year follow-up. Ethics: All survey procedures and materials will be approved by the Institutional Review Board.

Discussion: Findings may inform the design and evaluation of cancer communication programs and interventions focused on increasing tobacco-related digital media literacy (i.e., evaluate tobacco advertising messages on digital platforms) among young adults. We believe that this online e-cigarette marketing measure can be adapted to multiple tobacco product classes (e.g., little cigars, and modern oral nicotine products) and other substances like alcohol and cannabis in the future.

**Expanding the role of the safety manager to implement a workplace smoking cessation program in the construction sector: The study design and protocol**

Asfar, Taghrid; Lee, David, J; McCollister, Kathryn; Salloum, Ramzi; LeLaurin, Jennifer H; Pradhananga, Nipesh; De Dios, Roxana; Oluwole, Olusanya; Bursac, Zoran

Introduction: Construction Workers (CWs) in the US have the highest smoking rate among all occupations (27.2% vs. 21.8%). This study aims to implement and test 3 smoking cessation programs with increasing intensity delivered by the safety manager. The 3 programs are: A) Tobacco Quitline (TQL) + nicotine replacement treatment (NRT); B) TQL + NRT + 1 group behavioral counseling

session; and C) (intensive program) NRT + 4 group behavioral counseling sessions. Methods: Multilevel implementation strategies at several contextual levels enhance new program implementation. Adaptive program design optimizes long-term cessation outcomes by tailoring treatment via a sequence of decision rules that increase program intensity over time when individuals are not responding adequately. The Sequential Multiple Assignment Randomized Trial (SMART) is a multistage trial that optimizes adaptive programs. The hybrid type 1 effectiveness-implementation trial design allows researchers to simultaneously evaluate the effectiveness and implementation of the program. Informed by the Consolidated Framework for Implementation Research (CFIR), we will develop and execute multilevel implementation strategies for workplace smoking cessation programs delivered by safety managers. Informed by the REAIM model (Reach, Effectiveness, Adoption, Implementation, Maintenance), we will test the 3 programs in a hybrid type 1, 2-phase SMART. Primary outcomes are the programs' effectiveness (12-month validated prolonged abstinence) and cost-effectiveness (cost/quit, cost/quality-adjusted life-year). Secondary outcomes are the programs' implementation feasibility. We hypothesize that compared to A, B, or A+C, program B+C will have the best outcomes. Ethics: The study received approval from the university IRB. Discussion: This project will provide scientific evidence for effectively implementing a novel, adaptive, highly scalable workplace smoking cessation program for construction workers. Conclusion: Findings will inform practice and policy to reduce smoking among construction workers and will promote the implementation of sustainable smoking cessation programs in the construction sector in Florida and nationally. Registration: Clinical Trial Registry # NCT06098144.

## **YOUTH FOR HPV PROJECT**

Nuzhath, Tasmiah; Olufadewa, Isaac

**Introduction:** Cervical cancer is one of the leading causes of mortality among women in Nigeria. To prevent cervical cancer, Nigeria has introduced the Human papillomavirus (HPV) vaccine into the routine immunization schedule. During the roll-out, Lagos state in Nigeria reported the lowest vaccination coverage (31%). Our aim is to increase HPV vaccination uptake in Lagos by implementing a "citizen science approach" to increase awareness and advocacy about the HPV vaccine.

**Methods:** We will recruit a cohort of 50 young people (aged 15-24) as "Youth Cervical Cancer Champions" in Lagos State. We will develop resources to support the Youth Champions in implementing culturally sensitive community-based awareness campaigns and outreach activities to educate adolescents, caregivers and other community members about the importance of HPV vaccination in preventing cervical cancer. We will also engage the Youth Champions in citizen science activities such as community-based data collection on barriers to HPV vaccine uptake and empower the Youth Champions to analyze the data, develop content for school and community dissemination workshops, and implement it. We will conduct pre- and post-evaluation studies to understand the impact of the training program on the youth vaccine champions, particularly their knowledge and advocacy skills related to HPV vaccination.

**Ethics:** We have applied for IRB approval.

**Discussion:** By training and empowering the Youth HPV Champions, the project aims to build community capacity and leadership, ensuring the sustainability of the interventions beyond the project's lifespan. Involving the young champions as co-creators and co-researchers, the project will aim to ensure that the intervention is tailored to the specific needs and realities of the target communities. The young people will be equipped with the knowledge, skills, and resources to continue advocating for and

driving increased uptake of HPV vaccination in their communities.

## **Association of Telehealth Encounters with Lung Cancer Screening Consultation in the United States**

Xie, Zhigang; Stallings-Smith, Sericea; Cho, Beomyoung; Wells, Jennifer; Hong, Young-Rock

**Background:** Lung cancer stands as the leading cause of cancer-related fatalities in the United States. To promote lung cancer screening among the eligible population, a crucial step involves a shared decision-making discussion between the patient and primary care provider regarding lung cancer screening services. Little is known whether telehealth visits can be deemed comparable to traditional in-person visits for lung cancer screening consultations.

**Methods:** Our study used data from the 2022 Health Information National Trends Survey 6 (HINTS 6), which is administered by the National Cancer Institute. Multivariable logistic regression models were employed to examine differences in lung cancer screening discussion experience between telehealth users and nonusers, adjusting for all other covariates.

**Results:** Our final analytic sample included 1,105 (weighted n=31,474,628) persons with current or former cigarette use aged 55-80 years. Overall, 41.2% had used telehealth at least one time in the past 12 months and 9.9% had discussed lung cancer screening with their healthcare providers at least one time. There was no statistically significant difference in the odds of lung cancer screening discussion experience with healthcare providers between telehealth users and nonusers (adjusted odds ratio [AOR], 0.91; 95% confidence interval [CI], 0.36-2.29). Of telehealth users, the odds of lung cancer screening discussion experience among exclusive phone call users (AOR, 1.20; 95% CI, 0.23-6.17) and both video and phone call users (AOR, 0.82; 95% CI, 0.11-5.98) were not statistically different from the exclusive video call users.

Conclusions: Despite the overall low rate of patient-provider discussions about lung cancer screening in eligible individuals, our study suggests that telehealth and in-person encounters seem to be comparable for lung cancer screening consultations. This lack of significant difference may support the argument for expanding telehealth, including cancer screening, to address cost-related challenges and geographic barriers to access to care in the US.

### **Networks of Care: Understanding and Addressing Burnout through Healthcare Culture**

Tapia, Valerie, A

Introduction: Primary care (PC) healthcare worker (HCW) burnout has reached epidemic levels, significantly affecting PC workforce well-being and threatening patient care quality. This study aims to comprehensively investigate the intersection between HC workforce culture and burnout in PC settings through a scoping review, social network analysis (SNA), and phenomenological interviews. By leveraging the findings of these studies, our research team seeks to identify actionable steps to improve PC workforce well-being.

Methods: This study will employ four approaches: 1) A scoping review will systemically map literature on HCW burnout and PC workforce culture in the U.S. 2) A SNA will be conducted through an online survey distributed to 60 patient-facing PC workers from a large, state-funded medical center. Recruitment will be in collaboration with clinic leadership. The SNA will assess how social connections (Connections During Conversations Scale) influence burnout (Burnout Assessment Tool). Analyses will include correlations, spline regression, and diffusion of innovations. 3) An inductive thematic analysis of phenomenological interviews with 14 PC workers who reported experiencing burnout in the SNA will provide insights into how lived experiences and contextual factors shape burnout; 4) The Nominal Group Technique, a Participatory

Action Research method will engage SNA participants in developing actionable strategies by discussing select findings from the first three study aims and democratically ranking a community-preferred action plan. Ethics: All personally identifiable information will be redacted before analysis. The university IRB is reviewing the social network analysis and interview components for approval.

Discussion: By integrating diverse and novel methodologies, this research aims to deepen our understanding of the cultural and social dimensions of HCW burnout and generate effective organizational strategies to enhance workforce well-being in primary healthcare settings.

### **Implementation of the Pathways to Healthier Living Community Health Worker Program: A Randomized Control Trial**

Hooten, Madeline; Herath, Binoli; Domino, Marisa; Villegas-Gold, Michelle; Jackson, Jeffrey; Crittenden, Sonora; Johnson, Jessie; McEntee, Mindy, L

Introduction: Community Health Workers (CHWs) are trusted members of underserved communities, bridging gaps between patients and healthcare systems, improving health equity, and reducing hospitalizations. However, data in this field is currently limited by a lack of standardization spanning CHW training, utilization, integration with community and healthcare systems, funding mechanisms, and outcome metrics. This project aims to scale and evaluate the effectiveness of a sustainable CHW program to increase access to needed services and improve health outcomes among high-risk patients identified during hospitalization at a medical center in Phoenix, Arizona.

Methods: Patients identified as high risk through a two-tiered triage system will be randomized to receive either CHW services based on the Pathways Community Hub Institute (PCHI) model or standard care. A mixed-methods evaluation will assess

program outcomes and guide refinements. CHWs will track implementation data and qualitative data will be collected from stakeholders (CHWs, care teams, administrators) using a community-based participatory research approach. Qualitative analyses will triangulate data from multiple sources (observations, interviews/focus groups, implementation records) and perspectives to evaluate organizational readiness/capacity for change, stakeholder preferences and priorities, the climate for change, and facilitators and barriers to implementation.

**Discussion:** This program takes an innovative, community-centered approach, addressing social determinants of health while creating a pipeline from CHW training to employment. Findings from this program will inform scaling efforts through identification of facilitators and barriers to success.

**Ethics:** This study has been approved by applicable local Institutional Review Boards (IRB).

**Registration:** This study will be registered with ClinicalTrials.gov

### **Conducting a Randomized Control Trial to Expand Adolescent & Young Adult Sexual Health Programming**

Garney, Whitney; Wilson, Kelly; Esquivel, Christi; Rosen, Brittany; Hineline, Sydney; York, Felicia; Miller, Meagan

**Introduction:** We are conducting a multi-site clustered randomized controlled trial (RCT) to evaluate the impact of a sexual health education (SHE) program on youth's 1) intention to delay sexual intercourse and 2) individual-level skills (communication, decision-making, and accessing information) and perception of connection to trusted adults. **Methods:** This study uses a RCT to determine the effectiveness of an adolescent SHE program (treatment) compared to a control group. Sites from various geographic areas in the U.S are randomized as a treatment or control group. Youth are recruited from selected community or school

sites serving middle school aged youth (11-14 years old). The innovative, game-based learning program was developed using human-centered design. The program includes four games played in a facilitated environment and one take-home activity with topics focused on making safe connections with trusted adults, accessing credible information sources, effective communication skills, and critical thinking and problem-solving skills. The SHE program is founded on Social Cognitive Theory. The intervention will be compared to the control group which is a "business-as-usual" condition. Data collection occurs at four time points using an electronic survey for both groups. Youth participants complete validated surveys at baseline (before programming) and immediate post (after programming), followed by a 3- and 9-month follow-up. Data analysis will focus on the intention to delay sexual intercourse and as well as individual-level skills and perceptions of connection to trusted adults after treatment will be compared to the control group. Expected outcomes include: 1) preliminary effectiveness data supporting the SHE as a promising intervention, and 2) an innovative, game-based program scaled for implementation in multiple settings. **Ethics:** This study protocol has received University IRB approval. **Discussion:** If successful, this RCT will establish the intervention as evidence-based and serve as a step towards providing innovative SHE programming specific to middle school youth.

### **Development of Snooze 2-Quit: A novel smoking cessation app for socioeconomically disadvantaged individuals (SDIs)**

Ra, Chaelin, K; Spaeth, Andrea; Businelle, Michael; Steinberg, Michael; Amaro, Christina; Handorf, Elizabeth

**Introduction** Difficulty sleeping is a common complaint among socioeconomically disadvantaged individuals (SDIs) who are trying to quit smoking and is predictive of relapse. This pilot study will develop a novel

sleep-focused smoking cessation intervention (Snooze 2-Quit) for SDIs. Content from cognitive-behavioral therapy for insomnia (CBT-I) will be integrated into an existing smartphone-based smoking cessation intervention (Smart-T). Intervention acceptability and feasibility will be assessed among SDIs who want to quit smoking.

**Methods** Adults who smoke and visit one of the 11 quit centers in New Jersey will be recruited and those who are interested will be screened for eligibility (e.g., household income <200% of federal poverty line, currently smoking  $\geq 5$  cigarettes/day, no history of sleep apnea). Enrolled participants will be randomized into either Snooze 2-Quit (n=20) or Smart-T (n=20) for 5 weeks (1 week pre-quit and 4 weeks post-quit). Both will be accessed remotely via smartphone app. Randomized participants will be sent a wrist actigraph to measure sleep-wake behavior, a Bedfont iCO Smokerlyzer to assess smoking status, and a Clincard to receive monetary incentives via USPS priority mail. Main outcomes include intervention feasibility and acceptability, objective and subjective sleep (duration, timing, quality), and smoking behavior (Ecological Momentary Assessment and smokerlyzer). For smoking and sleep outcomes, we will summarize and describe the difference from baseline for both conditions. This study will receive university IRB approval prior to data collection.

**Discussion** The development of this intervention holds great promise to bolster smoking cessation outcomes among SDIs who want to quit smoking, a key goal of Healthy People 2030, the National Cancer Institute, and the World Health Organization. **Registration** The principal investigator will comply with NIH Policy on the Dissemination of NIH-Funded Clinical Trial Information (NOT-OD-16-149). This project will be registered in ClinicalTrials.gov no later than 21 days after the first participant is recruited.

### **Clinical Trial Protocol Overview: Effect of Product Characteristics on the Appeal and Sensory Attributes of Nicotine Pouches**

Han, Dae-Hee; Martines, Paul; Kirkpatrick, Matthew; Pang, Raina; Tackett, Alayna; Wagener, Theodore; Cahn, Rael; Cho, Junhan; Leventhal, Adam

**Introduction:** Nicotine pouches (NPs) with high nicotine content may generate unpalatable sensory attributes (i.e., bitterness, irritation). Lowering pH and changing nicotine from a free-base to salt formulation may mitigate unpleasant sensory attributes of high nicotine content NPs and increase product appeal. This clinical experiment will assess the effects of variation in NP nicotine content and its interaction with pH level on sensory experience and product appeal among young adults.

**Methods:** Young adults (21-35 years) who used NPs in the past 30 days (current dual users of NPs and e-cigarettes and/or combustible cigarettes will be eligible) and are not currently planning to quit nicotine use (N = 72) will participate in a double-blind within-subject study. During one 3-hour experimental session, participants will self-administer 4 NPs in randomized order, varying in nicotine concentration (e.g., 3 vs. 6 mg) and pH (e.g., 8.5 or greater vs. less than 8.0), each with a 5-minute administration period. There will be a 40-minute inter-product rest interval. Participants will rate the appeal (e.g., liking, disliking, willingness to use again) and sensory attributes (e.g., smoothness, harshness, sweetness, bitterness, irritation) of each NP. Study materials will be commercially available products manufactured by leading providers (e.g., ZYN, VELO, on!). After the experimental session, participants will be compensated. **Ethics:** This study has received university IRB approval.

**Discussion:** This project will identify two product characteristics (low pH and high nicotine) that may perpetuate NP use and



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nicotine dependence risk by increasing their appeal and potential abuse liability in young adults, and therefore merit FDA regulation. Registration: This study has been registered with ClinicalTrials.gov.